EMPATHY AS A TWO COMPONENT PROCESS

By

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DEDICATION

To my parents with love and gratitude

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The purpose of this study was to look at the relationship between two variables, cognitive understanding and emotional responding, which have both been conceptualized previously as aspects of empathy. To do this both were measured as responses to the same stimulus, a tape of an interaction between three people. In addition, the predictability of both responses from a trait variable, tendency to respond emotionally to the perceived emotions of others, and the effect on both of a situational variable, the mood of the empathizer, were ascertained.

The results indicate that within this study there was no significant relationship between the two response variables, as measured by scores on a role-taking task and two mood adjective check lists, except between role-taking and concentration. This is not surprising since one would expect that increases in concentration would be associated with increases in performance on a cognitive task. The trait variable was not effective in predicting either cognitive or emotional responses within this situation. In order to assess the effect of the subject's mood on these two

responses, one group of 36 female subjects listened to the stimulus interaction tape immediately after listening to a tape designed to induce a negative mood. The other group of 36 female undergraduates listened to the interaction tape following a neutral preliminary tape. The responses of the two groups were then compared. No differences were found between the two groups on their role-taking scores. For the emotional response scores a significant difference was found. Subjects who had listened to the negative mood inducing tape first showed significantly higher response scores following the second tape for depression, hostility, and aggression and significantly lower response scores for surgency and social affection. An unexpected effect that approached significance was an interaction between the subject's tendency to respond emotionally to another's feelings and her pre-exposure to either a negative mood inducing or neutral tape with the actual emotional response scores as the dependent variables. Though none of the univariate F's were significant, a pattern emerged in which within the experimental condition subjects who scored above the mean in their tendency to respond emotionally displayed a greater emotional response than subjects who scored below the mean. In the control condition, however, subjects scoring below the mean in emotional response tendency displayed a slightly higher level of emotional response. As an additional measure subjects were asked to complete an adjective check list as if they were the female character. Analysis of the results of this administration revealed no differences between the groups employed on the anxiety and depression scales. The only significant effect on the hostility scale was an interaction between level of emotional response tendency and assignment to either the control or experimental condition ($F = 8.312$, $p<.01$). The subjects' ratings of the female character on all

of the scales were remarkably consistent.

The results of this study suggest that the two variables, cognitive understanding and emotional response, functioned relatively independently of each other within this study. They were not significantly correlated and were differentially sensitive to the situational variable. This finding plus the fact that subjects developed strikingly uniform perceptions of the feelings of the female character despite the wide variation in their own emotional and cognitive responses suggests that perhaps by attempting to analyze empathy into its component parts and to measure their relationship, the essential nature of the empathic process was lost. It may not be just a combination of these responses that constitutes empathy, but a synthesis of them.

CHAPTER I

INTRODUCTION

The concept "empathy" has had many definitions, both theoretical and operational, throughout its history. One of the basic ones is that of Robert Katz (1963) who described the experience of empathy as feeling "as if we were experiencing someone else's feelings as our own. We see, we feel, we respond, and we understand as if we were in fact the other person" (p. 3). Implicit in this definition is both a cognitive component, that of understanding the other person and his feelings, and an emotional one, that of feeling them with him. In much of the other theorizing and research, however, there has been a tendency to focus on one of these components alone and to call it empathy. This has led to some confusion in the area.

The cognitive component of empathy, which has variously been called insight, role-taking, or person-perception, has had a place of great importance in the theories of men such as George Herbert Mead (1934). He discusses taking the role of another and the effect that this process has on communication and interpersonal relationships. He sees role-taking as a means by which a child becomes socialized and develops a self. He even goes to the point of equating role-taking with intelligence when he says that ". . . this putting of one's self in the places of others, this taking by one's self of their roles or attitudes, is not merely one of the various aspects or expressions of intelligence or of intelligent

behavior, but is the very essence of its character" (p. 141). Feffer (1959) studied the concept of taking the role of another in the cognitive sense. His concept of role-taking consisted of an extension of Piaget's concept of decentering from the physical, inanimate realm to the individual's social realm. Feffer and his collegues have done a great deal of work on this cognitive aspect of understanding another (Feffer, 1959; Feffer, 1970; Feffer & Jahelka, 1968; Feffer & Suchotliff, 1966; Lowenherz & Feffer, 1969; Suchotliff, 1970).

The other aspect of empathy, emotionally responding to the feelings of others, has had a place of central importance in the theorizing of men such as Sullivan (1953). For him the idea of empathy refers to the interpersonal process by which the tension of anxiety in the mother is transmitted to the infant. The emotional definition of empathy is used in the research of Stotland, Sherman, and Shaver (1971) who define empathy as ". . . an observer's reacting emotionally because he perceives that another is experiencing or is about to experience an emotion" (p. 2). Their research methods focus on the physiological changes that one undergoes in response to the perceived emotions of another. A problem with this type of measure is the difficulty in differentiating various types of emotional responses by means of physiological indicators. Another set of researchers who are also concerned with the emotional aspects of empathy are Mehrabian and Epstein (1972). They developed a paper and pencil measure to assess an individual's tendency to react emotionally to the emotions of others. Some construct validity was obtained for their measure in the form of relating it to measured aggressiveness and helping behavior. Emotional empathy is also the focus of Aderman and Berkowitz's (1970) study where empathy is measured by a change in reported mood on

the Nowlis Mood Adjective Check List following listening to an emotional dyadic interaction.

With both aspects of empathy receiving so much research attention, it is important to understand the relationship between them. This issue is addressed indirectly by Stanley Schachter in his discussion of emotion and its physiological basis (1971). His research has suggested that subjects react emotionally to the extent that they are physiologically aroused and also that their tendency to label this arousal as emotion is determined by the presence or absence of appropriate cognitive circumstances. In other words both arousal and appropriate cognitive stimuli need to be present for an emotional reaction to be totally experienced. In the area of empathy this type of reasoning was introduced by Hoffman (1975).

In his discussion of the development of a synthesis between affect and cognition and the effect of this upon altruistic motivation, Hoffman (1975) presents evidence for the existence of an independent motive to help others within men and suggests that empathy or responding to the feelings of others is the mechanism by which this motive works. Man is innately sensitive and responsive to the emotions of others because this ability has been biologically adaptive. Coupled with this ability is the growing sense of the other as a person that the experiencer develops and this determines how the person reacts to his affective responses. Thus the child or person has a basic affective response to the feelings of another and his reaction to this and interpretation of it is determined by his stage of development in his sense of another's individuality. Hoffman views this development as involving three basic steps. The first is the achievement of person permanence or awareness that the other is a separate physical being. The second is the development of role-taking

ability, that is a person's ability to take the perspective of another in a situation and to realize that the other has inner states which may be quite different from his own. The last step is the development of a sense of the personal identity of the other. This means that the child realized his own personal identity and continuity across different circumstances and by adolescence he should be able to perceive this in others. The manner in which these three stages are combined with the child's innate affective response is as follows.

Originally, Hoffman (1975) hypothesized, the child responds to the pain of another as if it were his own because of his inability to differentiate himself from the other. Gradually then with the emergence of a sense of the other as a separate and permanent person this empathic distress becomes extended to sympathetic distress. He now knows that the other person is the victim. This ability is limited, however, by the child's inability to take the role of another and to distinguish the causes and remedies of their distress from his own. Hoffman views this stage as a significant advance because ". . . for the first time the child experiences a feeling of concern for the other as distinct from the self" (p. 615). With the advent of role-taking ability and the realization that others have inner states and perspectives of their own, the child is motivated to try to take the role of the other and deduce the true cause of his distress by the affective response caused in him by the other's distress. Hoffman also posits that the child is aware of the tentative nature of his own perspective taking and is improving in this skill through corrective feedback from the environment. The third stage that is advanced occurs with the child's development of a sense of continuing identity and the awareness that others have one too. Before this time

the child was limited to taking the role of another in his immediate distress but now he can extend that awareness to the other's general condition and respond to the general well-being or lack of it that he sees. The major importance of Hoffman's work to the understanding of empathy appears to be its attempt to account for the complexity of the empathic process and the interrelationship of affective and cognitive factors in it.

The major points of Hoffman's discussion are supported by the studies that have been done to investigate the development of empathy in children.

The Development of Empathy

Many studies have been done to investigate the development of empathy in children with most of them focusing on the cognitive aspects of this process. One type of study deals with the child's increasing ability with age to identify the emotions of others (Gates, 1923; Kellogg & Eagleson, 1931; Walton, 1936). In each of these studies the child was presented with photographs of an actress and asked to identify the emotion she was expressing. Besides the increased ability with age to identify emotions in general, a gradient of difficulty in the identification of particular emotions was found. Laughter was the easiest to identify, being understood by half of the three-year-olds, while pain was next with half of the six-year-olds identifying it correctly. Anger, fear, surprise, and scorn followed in that order (Gates, 1923). Kellogg and Eagleson (1931) found essentially the same order. One possible explanation for the early identification of the first two emotions as compared to the last four is that a correct response for the first required identification of only a general pleasantness or unpleasantness while for the last four

a more specific identification was required.

Another type of investigation in this area involves the taking of perspectives of various persons in social situations. This type of study tends to be done with older children than the mere identification ones (Dymond, Hughes & Raabe, 1952; Feffer & Gourevitch, 1960; Flapan, 1968; Ruderman, 1962; Scarlett, Press, & Crockett, 1971). Dymond, Hughes and Raabe (1952) demonstrated that empathy increased with age in seven-to eleven-year-olds. Their method involved taking pictures from magazines of children in various social situations with or without adults and telling a simple story about them. The child was then asked to identify the feelings and thoughts of the people in the pictures. In Feffer and Gourevitch's (1960) study the child tells a story and then retells it from the point of view of each of the characters. His ability to assume each point of view and yet maintain a coherent story was called his degree of "balanced decentering" (p. 384). This ability was found to increase with age and to be related to Piagetian physical tasks which required an ability to focus simultaneously on more than one aspect of a problem. Flapan (1968) used two film clips to assess the empathy of six-, nine-, and twelve-year-olds. A transition in the explanations that children gave for actions occurred between the ages of six and nine with only three six-year-olds accounting for the actors' actions in terms of the actors' own feelings while twelve nine-year-olds and fourteen twelve-year-olds did. Also the six-year-olds gave no responses indicating one actor's perceptions of another's feelings while six nine-year-olds and six twelve-year-olds did. Scarlett et al. (1971) found that between the first and fifth grades children tended to shift from describing their peers in concrete, egocentric terms to describing them in

non-egocentric, abstract terms. The general conclusions that can be drawn from these experiments are that with age a child's ability to interpret a social situation from different points of view increases and that perhaps between the ages of six and nine a transition occurs from the child's original egocentric state which allows this social perspective to first appear.

Feshback and Roe (1968) did a study of six- and seven-year-olds using a series of slides depicting different affective situations, such as a birthday party or a lost dog, along with a short narration. The child's task was to name the response of the child in the situation. This was similar to other social situation experiments except that younger subjects were used. A difference in their ability to perform the task was found to vary with the emotion presented as it had in the Gates (1923) and the Kellogg and Eagleson (1931) studies. The mean for happiness was greater than that for sadness which exceeded those for aggression and fear. When children did not have to identify the particular emotion but only the general positive or negative nature of the situation, their judgments were one hundred percent accurate. This agrees with Gates (1923) findings that general emotions are easier to identify. Burns and Cavey (1957) also studied empathy with children under seven. Using subjects from three- to six and one half-years old, they expected to find egocentrism between the ages of three and five and increasing social sensitivity and empathy in the five to six and one half age group. Their method consisted of presenting the subjects with pictures of familiar social situations in which the child in the picture was displaying responses which were not usual, such as a small boy with a large smile on his face sitting beside a doctor with a long needle in his hand. Egocentrism was displayed when

the child responded as he would and not as the child in the picture actually was. They found that the younger group was significantly lower on empathy than the older. Borke (1971) also studied egocentrism in children under seven (actual ages were three to eight). Her procedure involved telling the children a story which was accompanied by a picture of a child with a blank face engaging in the activity. The subject was to select from among four faces, previously identified as happy, sad, afraid, and angry, the one that best fit the child in the situation. The ability of children to identify others' emotional responses was found to increase with age. The age at which the emotions were identified varied with the particular emotion being presented, with the happiest situations being the easiest to identify. Borke (1973) found similar trends cross-culturally in a study of Chinese and American children.

Some general conclusions seem to follow the results of these studies. First, the child's ability to identify emotions in others increases with age, first appearing at least by age three. This ability involves associating an emotional response with a particular facial expression or social situation. Between the ages of six and nine something occurs and the child can respond now to social situations in a more complex manner. He can identify the feelings of the participants that make them act as they do, that is he can see the situation from their viewpoint. In children below age seven, though they identify emotions in characters, in previous studies they have only given responses appropriate to the situation. The most simple explanation for this would be that children are responding by giving their own responses to the situation and not interpreting them from another's point of view. Chandler and Greenspan (1972) investigated the difference between role-taking ability and a more

primitive ability to identify the feelings of others. There were three cartoon stories which the subjects had to interpret from their own point of view and that of a late-coming bystander. They found that the youngest subjects tended to attribute their own point of view to the bystander but that the percentage of egocentric errors decreased with age. Deutsch (1974) investigated the effect that an incongruous response would have on the child's ability to respond empathically. In one situation the film used depicted a woman bringing a cup of coffee to a coworker who reacted with negative affect. This was assumed to be incongruent to the expected response and to require the child to do more than reflect his own projected feelings in the situation to be correct. The results showed that children's ability to verbalize about the actor's affective responses, intrapersonal behavior, and the reasons for her affective responses did not vary significantly with age for either the congruent or incongruent episodes. There was, however, a main effect for mental age for all three measures in the congruent episodes but not in the incongruent. Children's accurate perceptions were generally greater for the congruent than for the incongruent episodes also. Within the congruent episodes the children did best on the intrapersonal behavior measure, next on the affective measure, and lowest on the reasons for final affect. Deutsch (1974) concluded that the ability to perceive the affect of another is a necessary but not sufficient condition for one to be able to give a reason for his affective response. Thus it appears that by age three or four children are able to identify emotions that are congruent with what would be normally expected in the situation but when the emotions or the tasks become more complex they have difficulty. Borke (1972) sees the development of empathy as a continuous process beginning with an awareness of

the emotional states in others and developing through stages to the perspectivistic thinking described by Chandler and Greenspan (1972).

There seem to be several general conclusions that can be drawn from the results of the research on the development of empathy in children. A child acquires the ability to identify the emotions of others originally from concrete perceptual attributes of the person such as his facial expression. His ability to do this successfully varies with the complexity of the emotion being presented with a general pleasantness or unpleasantness being the easiest. A child of about three years is able to make this discrimination. Between the ages of three and six, while the child's ability to identify specific emotions from facial expressions is increasing, his ability to assign the appropriate emotional response to a social situation such as a birthday party is also increasing. This, like facial expression identification, begins with responding to the general positiveness or negativeness of the situation and develops to a more complex discrimination.

These increases in ability to identify the emotions of others can all be interpreted as increased knowledge about situations and expressions rather than as a change in the process that a child goes through to identify emotions. He is still focusing on rather concrete perceptual attributes of the stimulus situation and responding to them. This parallels findings in other areas of cognitive development that show that a child of below age seven is relatively egocentric and tied to his own perceptions. Piaget and Inhelder (1967) studied the effect of this egocentrism on a child's perceptual experience. In their experiment children were shown a three dimensional model of three mountains and were asked to select from among ten paintings the one that represented

the perspective of a doll that occupied different positions around the scene. In another part of the experiment they were asked to reconstruct the doll's perspective. Their results showed that between the ages of four and seven the children distinguished little or not at all between their own and another's point of view, making many egocentric errors. At about seven or eight egocentric errors no longer predominate and the child seems aware of the existence of other points of view. From nine to ten they no longer made egocentric errors and were nearly always correct. Other researchers have supported the hypothesis that children of below approximately age seven are egocentric (Elkind, 1961; Flavell, Botkin, Fry, Wright, & Jarvis, 1968). In general the finding that a child's ability to take the perspective of other's increases with age has been supported by recent research (Hoy, 1974; Kurdek & Rodgon, 1975; Mossler, Marvin, & Greenberg, 1976; Rubin, Attewell, Tierney, & Tumolo, 1973). There have been some disagreements, however, over the ages at which children develop basic role-taking skills with authors such as Borke (1975) or Urberg and Docherty (1976) suggesting that the ages found may be a function of the type of tasks employed and the responses required and not just the presence or absence of perspective taking ability.

Between the ages of six and nine a change seems to occur in the empathic process. Children are able to take the role of another and have overcome their egocentrism. Thus they are no longer bound by their view of a situation but can project themselves into the place of another. However, at this point, they are seeing the situation as they would if they were in the other's place. They imagine themselves in another's position and respond as they would have themselves in that situation. This ability to project themselves into another situation increases with

age also with children becoming more and more aware of thoughts, feelings, and motivations as shown by Feffer and Gourevitch (1960) and Flapan (1968). The literature focusing on the development of empathy stops at age 12 or 13 and the question still remains of what happens to the empathic process during adolescence. Is it as Hoffman (1975) hypothesized that the child's formation of a sense of identity and continuity enables him to perceive another's identity and to empathize with his or her life situation?

The research that relates most closely to this question is that in the area of person perception. Secord and Peevers (1974) report a study in which people were allowed to describe themselves and others freely. They obtained descriptions of three friends, a disliked person, and the subject themselves from children at five grade levels: kindergarten, third grade, seventh grade, eleventh grade, and college. The responses were divided into four different classes of descriptive items: undifferentiating, simple differentiating, differentiating, and dispositional. Descriptiveness for them refers to the extent to which a response identifies the person as a distinct individual. Undifferentiating items say nothing particularly unique about a person and include responses about possession and location. They found that these items decrease proportionately with age. Simple differentiating items are those which describe a person ". . . in terms of simple, superficial characteristics, global judgments, or his gross relationship to the perceiver" (p. 126). These are the most common type of response and predominate at the kindergarten level. They remain the most common item in the third and seventh grade and by the eleventh grade and college are still very frequent. Differentiating items, "which describe a person in terms of fairly specific personal characteristics, such as interests, abilities

or beliefs, or temporary states or conditions" (p. 126), increase sharply at eleventh grade and at college are the most frequent type of response. Typical types of items include statements about interests, activities, abilities, or feelings and reactions. The fourth and last category is dispositional items which "describes the person in terms of traits which have implications for his behavior in a wide variety of situations" (p. 127). This class of responses showed the most change from kindergarten to college where it is used with about the same frequency as differentiating items.

The other aspect of Secord and Peever's (1974) work refers to the personal involvement of the individual when he describes others. The three levels of involvement they found were egocentric, where the "person is described in subjective, self-oriented terms"; mutual items, ". . . in which another person is described in terms of his relationship to the perceiver"; and other-oriented items "in which no personal involvement is expressed" (p. 128). Other-oriented items were found to increase with age though at all ages some egocentric and mutual items appeared. The proportion of egocentric items was greatest for the kindergarten children. When looking at this aspect in respect to describing liked and disliked peers, they found that egocentric items were more frequently used when describing disliked peers at all ages.

Livesley and Bromley (1973) have also studied person perception in childhood and adolescence. Their results indicated that the number of dimensions along which a child can conceptualize others increases with age and that the greatest differentiation occurs between the ages seven and eight which suggested to them that "the eighth year is a critical period in the psychology of person perception" (p. 147). They feel that

two broad strategies are suggested. Before age eight, "children adopt a relatively concrete approach, focusing upon 'overt' rather than 'covert' qualities" (p. 147). Older children, however, are more abstract and "focus upon 'covert' qualities -- striving to discover consistencies and regularities in overt behavior, and using concepts referring to various inner personal factors such as dispositions, values, and beliefs" (p. 147). They found with respect to the dimension of characteristics of the stimulus person described that children had an easier time describing liked persons and peers than adults and disliked persons. They also found that descriptions of the former showed more understanding. Though there was no change on the concrete-abstract dimension except for increasing abstractions after age eight, they did find a significant change in the way children organized their impressions. At between 12 and 13 there was an increase in organizing and qualifying statements. Subjects over 13 "used a greater variety of qualifiers and were more discerning in their use" (p. 203). This increased the discriminations between attributes that they were able to make. There was also an increase in quasi-causal explanations which showed that the "children were beginning to understand that a 'person' is not the absolute cause of his own behavior, but merely part of a larger causal nexus, namely, the person in an environment" (p. 204). Some older children were also aware that their descriptions were their own expressions and feelings about the person and might be different from the observations of another so they made attempts to justify their impressions by offering evidence and explanation.

Rockway (1969) has done research on the process of person perception in adolescence with the hypothesis that it becomes "increasingly hypothetico-deductive and decreasingly self-focused throughout adolescence"

(p. 630). Three groups from the sixth, ninth, and twelfth grades were used. He found that the youngest group was significantly less logical than the older two which did not differ significantly. He also found that egocentricity seemed to be curvilinear with only the early and middle groups differing significantly from each other.

The results of the person perception literature seem to be consistent with what has been found in the study of empathy. Children below the age of approximately seven respond to people in a more concrete manner than older children. They describe them in terms that are concrete and identify their feelings by means of observable concrete criteria such as facial expression. Between age seven and twelve or thirteen children can describe others in more abstract terms. They can take the role of another person and determine perceptually and on the emotional level what would be the appropriate response in that situation. After age twelve or thirteen the literature on empathy development is silent, but from the literature on person perception it appears that the child develops the ability to recognize that his perceptions of another person are just that, his own perceptions, and that there are other possibilities. This would be consistent with the Piagetian conception of the stage of formal operations where a child is able to think in the realm of possibilities (Flavell, 1963). Also the child is now able to think about the interaction of someone's characteristics with his environment. The implications of this for empathy are that now the adolescent is beginning to be aware of the feelings of another person, not as he himself would feel in the situation, but as he imagines that particular person would from the empathizer's knowledge of him and the circumstances that he is in. In general these results support Hoffman's premise that the adolescent's empathy is

affected by his ability to perceive someone else as having a continuous identity.

The Affective and Cognitive Components of Empathy in Adults

If one accepts Hoffman's premise that empathy is in fact a combination of affective and cognitive components, the literature on adult empathy is silent on the relationship between the two. Either the focus is placed on the cognitive aspect, as with the Feffer role-taking studies or on the emotional aspects as with Mehrabian and Epstein (1972). Other studies ignore this issue entirely and view empathy as a unitary trait that one can possess more or less of. For example Hogan (1969) developed a self-report scale to predict which people would be more empathic. He had various groups from laymen to psychologists develop Q-sort descriptions of the empathic man. These descriptions were then used as guidelines for rating individuals on empathy. Individuals were divided into high, middle, and low subgroups and their responses on the CPI, MMPI, and IPAR (Institute of Personality Research and Assessment at the University of California) pool of items were compared. Finally 64 items were selected to make up the empathy scale. In terms of validity the correlations of the scale and the ratings of an independent sample was .39. In a study such as this one the focus is not really on empathy as a process but on empathy as a trait which can be predicted.

To understand what we know about the empathic process in adults it is necessary to look more closely at what is known about the components. The cognitive component which has received the most investigation is that of role-taking in the affective realm. Feffer (1959) developed a technique which he named the Role-Taking Task (RTT), with which he hoped

to measure Piaget's concept of decentering within the interpersonal realm. The task was a projective one involving the subject telling a story in response to stimulus materials from Schneidman's Make A Picture Story (MAPS) and then retelling the story from the point of view of each character involved. These responses are then analyzed in accordance with a procedure he has developed to assess the subject's ability to take different roles. Interjudge reliability for his scoring system was .89 on the Spearman rank difference correlation. The purpose of this original study was to determine if higher levels of role-taking ability were indicative of higher levels of cognitive development. Support was found for this hypothesis using indices of the Rorschach as measures of cognitive level. Further evidence for the developmental aspects of this task was given by Feffer and Gourevitch (1960). Their study showed that role-taking ability, as measured by the RTT, increased with age and that there were positive correlations between role-taking ability and Piagetian decentering tasks with age and intelligence controlled.

In 1966 Feffer and Suchotliff studied the actual effect that role-taking skills had on social interactions. By pairing people who were high on these skills with each other and those who were low with each other, he found that the higher RTT dyads were able to communicate words more quickly to each other in a password type guessing game. This was with controls for verbal intelligence and verbal fluency. Thus a person's role-taking skills can affect his ability to interact effectively with another person.

Two studies in the area addressed the question of variables that might affect a person's ability to make full use of his role-taking abilities in a particular situation. Feffer and Jahelka (1968)

investigated the effect that characteristics of the initial story told might have on a person's ability to decenter from it. Their results indicated that a person's decentering ability was a greater factor in his performance than the stimulus characteristics of the story. Subjects who were high in decentering level initially were high even when the stimulus story they were using subsequently was a low decentering level one. Lowenherz and Feffer (1969) investigated the possibility that difficulty might be introduced into the RTT when one of the TAT figures represented defensively isolated aspects of the self. They assigned subjects to one of two conditions, one in which the figures had these attributes and one in which they did not. They showed that subjects had more difficulty in the defensive isolation condition. The results of both of these studies seem to indicate that while there is a strong decentering component to role-taking, the process can be influenced by situational variables.

The other component of the empathic process, the emotional response to the feelings of another, has also received some attention. Mehrabian and Epstein (1972) used their emotional empathy scale to look at the relationship between emotional empathy and aggression and emotional empathy and helping behavior. They found that emotional empathy by itself did not inhibit aggression but when combined with the immediacy of the victim, there was an effect. For subjects low in emotional empathy immediacy of the victim made no difference in their aggressive behavior while for those high in emotional empathy, aggression was less when the victim was immediate. This suggests that even emotional empathy is responsive to situational variables. Their investigation of helping behavior and emotional empathy indicated that they were related also. Thus more evidence for the validity of their instrument was obtained.

The work of Stotland, Sherman, and Shaver (1971) also suggests that situational factors are important in the empathic process. One particular variable they looked at was that of perceptual set. They used three conditions: one asking the subject to imagine himself in the other's position, one asking that he imagine how the other felt, and one just asking him to watch the other's physical movements. The results suggested that the perceptual set did influence the degree of empathy and that imagining oneself in the other's position seemed to be the most effective for producing empathy.

This research on empathy in adults leads to several general conclusions and to many questions. First, the existence of both a cognitive and an affective component in the empathic process seems to be supported. Also, while it appears that there may be individual differences in abilities and tendencies to respond in these areas, there are suggestions that, as in the area of formal operations cognitively, the actual utilization of these components is based on some situational determinants. Some examples of these determinants are the presence of defensively isolated characteristics as in the Lowenherz and Feffer study (1969) and the variable of perceptual set in the work of Stotland, Sherman, and Shaver (1971). The earlier work in the area of person perception suggests that the person's level of acquaintance with the object of his empathy and his feelings of like or dislike for that person may also affect his ability to react empathically to him (Secord & Peevers, 1974). The stimulus characteristics of the object of empathy may also be a factor in the empathizer's response. Another situational variable that may be important in this process is that of the mood of the empathizer. This is intuitively appealing to any clinician who has observed that his ability to empathize

may vary from day to day as well as from client to client.

Wessman and Ricks (1966) defined moods as ". . . states of emotional or affective arousal of varying, but not permanent, duration" (p. 9). Moods have also been seen as milder than full-blown emotions and as ". . . pre-dispositions to respond in certain emotional ways and experience certain feelings" (p. 9). Nowlis has done a great deal of work with mood on the Mood Adjective Check List (MACL). This instrument requests the subject to respond with the feeling that he is experiencing at the moment. This reduces the influence of social desirability and is easier to judge than responding with the day's average. Six or seven basic mood factors have been suggested by factor analytic studies with this instrument: Aggression, Anxiety, Concentration, Fatigue, Social Affection, and Surgency (Nowlis, 1965).

The relationship of mood to the empathic process is suggested by the research on the relationship of mood to the perception of an emotion. Studies have shown that a subject's perception of the emotion expressed in a photograph varies according to the mood the subject is in when he does the viewing. Schiffenbauer (1974a) found that a subject's state of arousal exerted a strong influence over his judgments of another's emotion and that he, if aroused, was more likely to attribute the emotion that he was feeling or a similar one to the person that he was judging than someone not aroused. His method of arousal consisted of tape recordings that were pretested for effect. In another study Schifferbauer (1974b) attempted to determine if subjects would respond spontaneously with emotional attributions to the photographs. The results indicated that the frequency with which this happened was influenced by both the subject's arousal level and by the intensity of the

stimuli. There was additional support for the subjects' tendency to report similarly valenced emotions to their own with subjects in the comedy manipulation giving the highest proportion of positive labels and the disgust group the lowest. Zillman, Mody, and Cantor (1974) have extended the study of the effect of mood on emotional perception to the film media. In their study four film clips were presented to subjects to manipulate hedonic tone and excitatory potential. These were followed by a film clip showing two persons involved in an emotional interaction. The results indicated that there was more intense involvement in the subsequent film when the first film was hedonically negative and less intense response when the first film was a high excitation one. In a second study they lengthened the period of time between the two film clips and provided additional instructions between the films to focus attention on the second film. In addition, in response to the second film, they rated not only their own responses to the film but also the displayed emotions of the protagonists. Again in response to this study the subjects rated their own response as sadder following hedonically negative initial films. However, the effect of excitatory potential in this study was negligible. They explain these results by reference to a process of cognitive adjustment. Thus they state that if

> . . . adjustment is impaired or prevented and the individual maintains cognitions related to the prior, actual source of excitation, intensification of subsequent affective experiences cannot be expected. Moreover, under conditions in which cognitive adjustment is not achieved, it may instead be expected that persistent cognitive preoccupation with the arousing experience will reduce attention to subsequently presented stimuli and thus impair affective and empathetic responses. (Zillman, Mody, & Cantor, 1974, p. 347)

It appears that an emotionally arousing experience of a similar hedonic

quality can enhance one's emotional response to a subsequent experience. However, if the prior experience is too intense or there is no opportunity for adjustment following it, the subsequent emotional response will be impaired. These studies have been particularly pertinent to the effect of mood on the emotional aspect of empathy. The question of its effect on the cognitive aspect has yet to be answered.

In summary, empathy is a very complex process. Very early in life it is possible for a child to respond emotionally to the emotions of others, perhaps as suggested by the research of Sagi and Hoffman (1976) as early as 34 hours after birth. It is possible that there are individual differences in the tendency to respond in this manner. As the child grows up the experiences that he has in his interactions with the world may affect the level of this tendency to respond that he maintains. If his early environment is relatively positive and tension free, he may have rewarding experiences because of his emotional responses to the feelings of others, and will continue to respond more in this manner than will the child who comes from an anxious tension ridden environment. The latter child will become anxious from exercise of his emotional response to others and might repress it. Thus each adult has some degree of emotional responsiveness to the emotions of others. This may be more or less than his original endowment depending on his developmental history. How he deals with this emotional responsiveness or interprets it is determined by his cognitive capacity or role-taking skill. At first, as Hoffman (1975) suggested, the person is not able to differentiate himself from the other and experiences the empathic emotions as if they were his own. As he grows up he becomes able to separate himself from the other and to realize that the emotion, either happiness or pain, belongs to the

other. However, his understanding of this emotion is still limited. He can only put himself in the other's situation and identify how he would respond in the same circumstances. He does not have a sense of the other's continuous identity and cannot identify the emotion based on the other's life history and past feelings, thoughts, wishes, and motivations. When this sense does develop, he is at the highest level in the empathic process and further development and use of the process increases his store of this type of knowledge about others. As his knowledge about himself increases so does his possibility of knowing others and with this an increased ability to fully empathize is created.

At the time a person has developed a sense of his own identity we would expect him to have the tendency to respond emotionally to the perceived emotions of another at least to some degree and to have the capacity to interpret these emotions based on his perception of the identity of the other. Of course this would occur under ideal circumstances and, as with the implementation of formal operations, there will be factors which facilitate optimal performance and those which hinder it. One important factor would be the familiarity of the empathizer with the individual to whom he is responding. It is easy to see that a greater degree of contact with someone will give more information to use in interpreting his responses. Not only familiarity with the person but also the positive or negative quality of the responder's feelings about the person could be a factor. Then there is a whole set of variables dealing with the current state of the empathizer, such as his mood, that could influence his ability to empathize at a particular time. From these ideas it appears that in order to fully comprehend the empathic response of another at a particular time it is necessary to know his

tendency to respond emotionally to others, his cognitive capacity for understanding that response, and any situational determinants that would affect the expression of these variables.

The purpose of this study is to look at an instance of empathic responding in light of the conception of empathy just expressed and particularly to look at the relationship between cognitive understanding of and emotional response to the perceived emotions of another. This seems important since both of these variables individually have received much research attention and both have been called empathy, but the relationship between the two has not been determined. Since it appears that the form these two responses will take will be determined partly by the response tendencies which the person brings to the situation and partly by the structure of the situation itself, it is important to include aspects of both of these variables within the study and to look at how they affect emotional response to and cognitive understanding of anothers' emotions. As a measure of response tendency, one's tendency to respond emotionally to the perceived emotions of others, has been selected and as a situational variable, the mood of the empathizer. It is important to remember that within this study empathy is conceived of as a process involving the person's actual responses, emotional and cognitive, within a particular situation. The form and intensity of these responses may be influenced by the person's tendencies to respond in certain ways and by the nature of the situation in which he is responding, but neither of these variables is actually empathic responding.

Though this study is largely exploratory in nature, some specific hypotheses have been made. The nature of the relationship between the two aspects of the empathic process measured here will be looked at by

correlating the two responses within the experimental situation. If both are actually part of an empathic process, a relationship between the two would be expected. This relationship might take several different forms. One possible form develops from the theory of Hoffman (1975) which was discussed earlier. In his conception of the relationship between cognition and affect, he suggested that the relationship was a developmental synthesis in that ". . . one's cognitive sense of the other may be presumed to determine the meaning of his affective response to cues about the other's inner states" (p. 614). Thus as the child developed, the level of his cognitive sense of the other would change and his interpretation of his own emotional response to the other would change also. Hoffman set forth three different levels of this cognitive sense of the other and attempted to illustrate how each interacted with the affective response to another. Within the first level of this cognitive sense of the other, the child begins to develop a sense of the other as a separate, permanent person distinct from himself. This takes place gradually and the child is at times not able to make the distinction. Thus, Hoffman concluded the child "probably reacts to another's distress as though his dimly perceived self and other were somehow simultaneously, or alternatively, in distress" (p. 615). The implications of this theory for the relationship between affect and cognition in adults can be understood in conjunction with findings of individual differences in emotional responsiveness to the perceived emotions of others as shown by Mehrabian and Epstein (1972). If these differences in responsiveness exist in very young children, then the children might differ in the intensity of the distress that they experience when exposed to the distress of another. In terms of motivation it seems logical that those children

who are more emotionally responsive and thus experience more distress would have a greater motivation to separate themselves cognitively from the other and thus reduce the intensity of their own distress. This increased motivation for highly responsive children might accelerate the rate of their acquisition of higher levels of cognitive understanding of the other over the rate of those who experience less intense distress. Thus it appears that greater emotional responsiveness might be associated with higher levels of cognitive understanding and this relationship could continue into adulthood. In the present study the intensity of the subject's emotional response to and his cognitive understanding of a taped interaction will be measured. Emotional response will be measured by mood scale scores, as Aderman and Berkowitz (1970) did, and cognitive understanding by scores on the Role-Taking Task (Feffer, 1959). Role-taking scores were selected as a measure of cognitive understanding because scores on this task reflect different levels in a person's ability to take another's perspective. These scores are closely related to cognitive development with higher scores being associated with higher level cognitive skills. Therefore, since variation in the level of cognitive understanding employed has been conceived of as an important aspect in the relationship between emotional response and cognitive understanding in the empathic process, it would seem to be important to employ a measure which indicates this variation. The content of the taped interaction will be unpleasant and therefore the subject's emotional response would be expected to be negative. If in fact a high level of emotional response is associated with a high level of cognitive understanding, then in this situation where the expected emotional response would be negative, it is predicted that:

1. There will be significant positive overall correlations between role-taking scores and the negative emotions experienced by the subjects following the interaction tape, specifically anxiety, depression, hostility, aggression, and sadness.

2. There will be significant negative overall correlations between role-taking scores and the positive emotions experienced by the subjects following the interaction tape, specifically surgency and social affection.

3. The same pattern of relationships between role-taking scores and emotions experienced will be found under all conditions.

The response tendency, one's tendency to respond emotionally to the perceived emotions of others, will be measured by the Emotional Empathy Scale developed by Mehrabian and Epstein (1972). According to the authors, the element that they attempt to measure by this scale is "the heightened responsiveness to another's emotional experience" (p. 526). It is important to remember that the trait measured by the Emotional Empathy Scale is not empathy itself which is conceived of in this study as a response that has both cognitive and emotional aspects, but rather one's tendency to respond emotionally to the emotions of others. This is a trait that may have an influence on the way a person expresses empathy in a particular situation but is not itself empathy. Therefore in order to avoid confusion between the empathic process being studied here and the trait being measured by the Emotional Empathy Scale, the term trait emotional empathy will be used when referring to one's tendency to respond emotionally to the perceived emotions of others. If the authors of the Emotional Empathy Scale have succeeded in measuring this trait, it seems logical to predict that when subjects are divided into two groups, a higher and a lower, on the basis of this scale:

4. Subjects in the higher group will display a larger emotional response following the interaction tape

in both the condition of pre-exposure to a negative affect inducing experience and pre-exposure to a neutral experience than will subjects in the lower group.

If this is true and if, as was predicted earlier role-taking and emotional response are correlated within this situation, then:

5. Subjects in the higher group will display a higher level of role-taking skills under both conditions than will subjects in the lower group.

The mood of the empathizer was chosen as the situational variable for study because of its intuitive appeal as a state variable that should affect one's response to other people and because of research cited previously which indicates that it does affect one's perception of emotion in pictures and other rather concrete media. Since this type of perception has been discussed here as one of the early stages in the development of empathy, it seems realistic to expect that later stages would also be affected. In order to determine what the actual effect would be, it is necessary to return to the earlier work and examine it more closely, specifically that of Zillman, Mody, and Cantor (1974).

The results of their studies indicated that pre-exposure to a film of a particular hedonic tone increased the subject's subsequent involvement in a subsequent film with a similar hedonic tone. The other aspect of their study dealing with the excitation level of the films, as measured by changes in blood pressure, indicated that pre-exposure to a film of a high excitation level was associated with less response to a subsequent film than pre-exposure to a film with a low excitation level. However, this occurred under the experimental condition where subjects were given no time between films. When the period of time between the films was lengthened and the subjects were given a task to perform

during the interval, it was found that the presence of a high excitation level actually enhanced the subjects' responses to the second film. This was explained by the authors by a concept they called cognitive adjustment. When this adjustment is not allowed, the subject maintains cognitions relevant to the preceding stimulus and these interfere with his ability to attend to subsequent stimuli. When adjustment is allowed, however, the arousal caused by the preceding stimulus enhances responses. Since their determination of hedonic tone involved just a rating of general pleasantness or unpleasantness of the film and not the subject's own emotional response to it, there is not necessarily any involvement on the subject's part represented by this variable. For the excitation variable, however, subjects do experience a physiological response or change and it is with this variable that the interference effect is associated. The question arises of whether a stimulus interference effect would occur when the subject's actual mood was changed by the initial film. Perhaps it is not the level of excitation produced that is the salient variable but just the presence of some involvement on the part of the subject and a change in his mood. This interpretation would fit their finding of the disappearance of the interference effect with the lengthening of the interval of time between stimuli because of the transient nature of mood itself. If mood did produce an interference effect, the mood itself would disappear as time passed. This study will attempt to determine if such an effect can be produced by manipulating the mood of a subject. Therefore, it is predicted that:

6. Under the condition of exposure to a negative affect inducing experience prior to listening to a tape of an interaction between several people, subjects will display less emotional response than subjects who undergo a neutral experience prior to the interaction tape.

7. Under the condition of exposure to a negative affect inducing experience prior to listening to a tape of an emotional interaction between several people, subjects will display a lower level of role-taking skills in response to a second tape than will subjects who undergo a neutral experience prior to the interaction tape.

Since the particular expression of the empathic process has been conceived of as a function of both capacity to respond and situational determinants, it is important to make predictions using both of these together. If both the subject's level of trait emotional empathy and his condition of assignment to either pre-exposure to a negative affect inducing experience or a neutral experience are used together to make predictions, an ordered sequence of the level of emotional responses and role-taking responses will be observed.

8. The lowest level of immediate emotional response and of role-taking skills will be displayed by those subjects who are within the lower group of trait emotional empathy and who are pre-exposed to a negative affect inducing experience.

9. The next level of immediate emotional response and of role-taking skills will be displayed by subjects who are within the lower group on trait emotional empathy and who are pre-exposed to a neutral experience.

10. The third level of immediate emotional response and role-taking skills will be displayed by subjects who are in the higher group on trait emotional empathy and who are pre-exposed to a negative affect inducing experience.

11. The highest level of immediate emotional response and role-taking skills will be displayed by subjects who are in the higher group on trait emotional empathy and who are pre-exposed to a neutral experience.

CHAPTER II

METHOD

Subjects

The subjects were 72 female undergraduates at the University of Florida who were enrolled in introductory psychology courses.

Measures

Measure of Trait Emotional Empathy

Trait emotional empathy was assessed by the measure developed by Mehrabian and Epstein (1972). This consists of a set of 33 items on which the subject rates himself on a scale of +4 indicating very strong agreement to -4 indicating very strong disagreement. The total score is the algebraic sum of the responses. The split half reliability of the measure is .84 and the total scale has a correlation of .06 with the Crowne and Marlowe (1960) social desirability scale.

The items for this test were selected from a larger set and represent related subscales which measure different aspects of emotional empathy such as "Susceptibility to Emotional Contagion," "Tendency to be Moved by Others' Negative Emotional Experiences," "Tendency to be Moved by Others' Positive Emotional Experiences," and "Sympathetic Tendency." There are seven of these subscales altogether and all of the inter-correlations between them are significant at the .01 level.

The authors report two studies done to establish the validity of their instrument in the same article (Mehrabian & Epstein, 1972). They found when studying the relationship of trait emotional empathy to aggression, that the immediacy of the victim was the key factor. Subjects low in trait emotional empathy would aggress equally against an immediate and a non-immediate victim while for subjects high in trait emotional empathy, the immediate victim received less aggression. In the second study they found that helping behavior was a function of empathic tendency also.

Measure of the Cognitive Component of Empathy or Role-Taking

This variable was measured by a variation of the Role-Taking Task (RTT) developed by Feffer (1959). The specific form used was a modification of the written group version used by Feffer and Suchotliff (1966). The major difference in this study from their work was that tape recordings were used instead of pictures as stimulus materials. Subjects listened to a tape of a conversation between two main characters. They then told a story about what was going on in the tape and retold the story from the point of view of the major male and female characters.

The scoring is based on the type of perspective taking involved with the subject's response being assigned to one of twenty categories as described in the scoring manual of Schnall and Feffer (Undated). These categories were divided into four basic classes of responses: simple refocusing, character elaboration, perspective elaboration, and change of perspective, which are "ordered in terms of the degree to which an increasing number of aspects of the situation are simultaneously considered or coordinated from more than one viewpoint" (Schnall & Feffer,

Undated, p. 10). Simple refocusing is the minimum ability to refocus and reflects just a change in the description from the initial story to the self-description. This change may be either consistent or inconsistent thematically. Character elaboration requires "not only a self entry, but an elaboration entry on that same actor" (p. 16). At the perspective elaboration level the subject must indicate "an appropriate inner-outer orientation in his self and elaboration entries. That is to say, the self entry must be 'inner-oriented,' and the elaboration entry must be 'outer-oriented'" (p. 18). The final class of perspective taking is the change of perspective. In this class the subject must have "two Perspective Elaborations involving the same two actors" (p. 30).

An early study using the RTT (Feffer, 1959) found that interjudge reliability using the Spearman rank difference correlation between two independent measurements was .89. Reliability of the measure was assessed in a study using children's responses (Feffer & Gourevitch, 1960). Here the estimates of decentering made on the first story and the second story were compared and the hypothesis of independence was rejected at the .001 level. Interjudge reliability in the present study based on the independent scoring of 25 protocols by two judges was .95 using the Spearman rank difference correlation.

Group administration of the RTT has been used effectively by several investigators (Feffer & Suchotliff, 1966; Feffer & Jahelka, 1968). In this procedure the TAT stories are projected onto a screen and the subject is asked to retell the story from the point of view of each character. He is given three minutes to retell each story.

Measure of Immediate Emotional Response

This variable was assessed by two measures: the Nowlis Mood Adjective Check List (MACL) and the Zuckerman Affect Adjective Check List (AACL). The principle of using this type of scale to measure emotional empathic response is not new but was used by Aderman and Berkowitz (1970).

Nowlis Mood Adjective Check List. According to Nowlis (1965), the MACL is based on the "tendency of persons in our culture to apply to mood certain adjectives which complete the sentence 'I feel ---.'" In this technique the person indicates certain adjectives as applying to his mood. The number of adjectives used as well as the number of choices in rating their correspondence to a person's feelings have varied from study to study. For example Borgatta (1961) used a 40-word list while Spence (1957) used an early 145-word form of the list.

Several factor-analytic studies have been done on the MACL such as that by McNair and Lorr (1964). Nowlis (1965) has summarized the results of these studies and suggests that several factors such as anxiety, surgency, aggression, concentration, fatigue, social affection, sadness, and egotism are consistently found and are important to be included in any mood adjective check list. Several other factors such as skepticism and vigor are seen as in need of future clarification while elation is perceived as of questionable value because of its close ties with surgency.

There is a problem in determining the reliability of the MACL because of its development as a measure of mood change and the expectation that mood is a variable which can change over a short period of time. McNair and Lorr (1964) however found that test-retest correlations ranged from .61 to .69 from one week to another in their neurotic patients and estimates of internal consistency ranged from .80 to .91.

Zuckerman Affect Adjective Check List. Zuckerman (1960) reported the results of a study in which he attempted to develop an adjective check list to measure anxiety and to test the reliability and validity of his measure. Based on an item analysis of two previous studies he identified 38 words that showed significant changes in checking frequency under anxiety conditions. For the reliability study subjects were asked to fill out the AACL twice: once as they generally felt and once as they felt today. It was predicted that in a retest one week later test-retest reliability would be found for the general test but not for the today test and that high internal consistency would be found for the today test and for the general test. This was indeed the case. In terms of validity he found that the AACL was sensitive to examination anxiety. Zuckerman and Baise (1962) did further work on the validity of the AACL as a measure of anxiety and found support for their hypothesis of a relationship between AACL change and the amount of exam worry.

In 1964, Zuckerman, Lubin, Vogel, and Valerius reported the development of two new scales for the AACL: depression and hostility. They validated the scales in several experimental situations. Their results showed that the anxiety and depression scales increased significantly in response to a stressful film for females but not for males. In another experiment they threatened students with a surprise exam and found increases in all scales but particularly in hostility. In terms of reliability they found good split-half reliability for all scales (anxiety .79, depression .92, hostility .90), and small significant test-retest reliability which they expected. Normative data for this check list containing the three scales was presented by Zuckerman and Lubin (1965). The populations that they used included: job applicants, college students, and

five samples of psychiatric patients.

Procedure

Each of the subjects participated in one testing session in small groups with a limit of five people. These groups were designated randomly as experimental or control. Initially all subjects filled out the subject information sheet (see Appendix A) and the Emotional Empathy Scale (see Appendix B). Following this they read the instructions. In order to avoid focusing their attention on empathy and perhaps influencing their responses, the printed instructions told them that the purpose of the study was to standardize a new test of imagination (see Appendix C). As soon as the instructions were read, they listened to two tapes. For the experimental group the first tape was the one designed to induce negative affect or mood. As a result of a pilot study the tape selected for this purpose was a recording of Shirley Jackson's (1969) short story, "The Lottery." For the control group the first tape was a neutral tape, designed not to have any effect upon the subject's mood and tested in a pilot study. Immediately following their preliminary tape both groups listened to the same stimulus tape of an interaction between three people. In this selection a young girl's father has just died and she is talking to two friends about her reactions. The fact that it was possible for subjects to make role-taking responses to this tape and that it did have an emotional impact were ascertained in the pilot study. The actual results of the pilot study are given in the results section. When the second tape ended, subjects responded to the MACL and the AACL (see Appendices D & E) as they currently felt. The order of presentation of these two instruments was varied randomly. Following the check lists,

subjects responded to the second tape with a role-taking task (see Appendix F). They were asked to tell a story about what was going on in the tape and then to retell their story twice, once from the point of view of the female character and once from the point of view of the major male character. The order of presentation of these characters was varied randomly. They then filled out the AACL twice, once as if they were the female character and once as if they were the male character (see Appendices G & H). The order here was varied randomly also. Lastly subjects filled out a final evaluation form in which they rated the male and female characters on several scales and the entire tape on its effectiveness (see Appendix I). At the end of the experimental session subjects were debriefed and any questions about the purpose of the study and the instruments were answered.

Statistical Analyses

For the purpose of analysis subjects were divided into two groups: those who scored above the mean and those who scored below the mean on the Emotional Empathy Scale. Each of these groups was further divided into the experimental and control conditions, yielding a two-by-two factorial design. The four cells thus formed were: high trait emotional empathy/experimental, high trait emotional empathy/control, low trait emotional empathy/experimental, and low trait emotional empathy/control.

In order to test the first two hypotheses which dealt with the overall relationship between the subjects' emotional and cognitive responses as measured here, overall correlation coefficients were obtained between the role-taking scores and all of the mood scale scores. Within cell correlation coefficients were obtained between these variables for each

of the four experimental cells. The purpose of this analysis was to test Hypothesis 3 which predicted a similar pattern of correlations for each cell as was found overall.

In order to test the effectiveness of the independent variables, level of trait emotional empathy and assignment to the experimental or control condition, in predicting responses in this situation several analyses were done. In order to determine their effect on emotional response, a multivariate analysis of variance was performed with the eleven mood scale scores as dependent variables. This analysis tested Hypotheses 4, 6, 8, 9, 10, and 11. The results of this analysis yielded univariate F's for each of the eleven mood scales and a multivariate F for all the scales taken together with each of the independent variables and their interaction serving as sources. For those analyses which displayed some level of significance, discriminant function coefficients were obtained. These revealed, by the number of roots extracted, the number of dimensions that account for the effects found and the loading of each of the dependent variables on these dimensions. In order to predict the effect of the two independent variables on cognitive responses a two-by-two analysis of variance was done with the role-taking responses as dependent variables. This tested Hypotheses 5, 7, 8, 9, 10, and 11.

As an additional analysis, the subjects' ratings of the emotional responses of the female character were also analyzed by means of a two-by-two analysis of variance. The independent variables in this analysis were the same as in the preceding analyses, level of trait emotional empathy and assignment to the experimental or control condition. The purpose of this analysis was to determine if the same variables that affected a subject's own responses to the interaction tape would also

affect her perceptions of the responses of the female character.

CHAPTER III

RESULTS

Pilot Study

A pilot study was done to determine the effect of the tape recordings used upon the emotions of the subjects. The Zuckerman Affect Adjective Check List and the Nowlis Mood Adjective Check List were both administered before and after the subjects listened to each of the tapes. Paired-comparison t tests were performed on the results of these administrations. For the experimental tape, designed to induce a negative affect, significant increases were found in depression ($t = 1.920$, $p<.05$), hostility ($t = 2.258$, $p<.025$), anxiety ($t = 2.96$, $p<.01$), and sadness ($t = 3.064$, $p<.005$). Significant decreases were found in social affection ($t = 3.410$, $p<.005$) and surgency ($t = 2.669$, $p<.01$). Thirteen female undergraduates responded to this tape. For the control tape, with thirteen female undergraduates responding, there were no significant t scores on any of the scales.

For the tape of an interaction between several people to be used as a stimulus for emotional responding and cognitive understanding, significant increases were found in anxiety (AACL - $t = 2.259$, $p<.05$) and nearly significant increases in depression ($t = 1.633$, $p<.10$) and sadness ($t = 1.815$, $p<.10$). A decrease was also found in anxiety ($t = 3.741$, $p<.01$). These findings are important because in order for the emotional response

component of empathy to be studied, the tape must be capable of inducing an emotional response. Nine female undergraduates participated in the pilot study on this tape.

Principal Analyses

To look at the relationship between role-taking and emotional response, as measured by the mood scale scores, overall correlation coefficients and within cell correlation coefficients were obtained for all of the dependent variables. When interpreting the results of these correlations it is important to remember that though many significant correlations were obtained, the reliability of any one of these is reduced by the number of correlations made.

Hypotheses 1 & 2. The results of the overall correlation indicate that the only relationship between role-taking scores and any of the mood scale scores was a correlation of .2702 ($p<.02$) between role-taking and concentration. However, there are many significant correlations between the mood scale scores themselves as shown in Table 1. Thus Hypothesis 1, that there would be significant positive correlations between role-taking and the negative emotions experienced by the subject, was not supported. Likewise support for Hypothesis 2 which predicted significant negative correlations between role-taking and the level of positive emotions experienced in this situation was not found.

Hypothesis 3. In the cell defined by high trait emotional empathy/ experimental condition no significant correlations were obtained between role-taking and any of the mood scale scores. Several significant correlations were obtained between the mood scores themselves as shown in Table 2. However, this cell had the lowest number of significant correlations.

Table 1. Overall Correlation Coefficients Between Mood Scale Scores and Role-Taking Scores

	1	2	3	4	5	6	7	8	9	10	11	12
Anxiety - AACL	1.000											
Depression	.770**	1.000										
Hostility	.707**	.664**	1.000									
Aggression	.385**	.357**	.428**	1.000								
Anxiety - MACL	.569**	.490**	.382*	.593**	1.000							
Surgency	.369**	-.451**	-.346*	.104	-.123	1.000						
Concentration	-.055	-.132	-.010	.038	.157	.062	1.000					
Fatigue	-.016	.159	-.043	.181	.229*	-.002	-.021	1.000				
Social Affection	-.416**	-.476**	-.478**	-.057	-.184	.621**	.174	.019	1.000			
Sadness	.382**	.394**	.159	.491**	.621**	-.056	.079	.402	-.026	1.000		
Egotism	.031	.050	-.014	.360**	.352**	.352**	.019	.204	.265*	.312	1.000	
Role-taking	-.003	.005	.103	.081	.066	-.046	.270	-.127*	-.066	-.174	-.039	1.000

*p<.05
**p<.01
N = 72

Table 2. Within Cell Correlation Coefficients: High Trait Emotional Empathy/Experimental Condition

	1	2	3	4	5	6	7	8	9	10	11	12
Anxiety	1.000											
Depression	.711**	1.000										
Hostility	.530*	.420	1.000									
Aggression	.316	.658**	.398	1.000								
Anxiety - MACL	.566*	.722**	.098	.421	1.000							
Surgency	.048	-.034	.038	.170	-.170	1.000						
Concentration	-.020	.153	.038	-.119	.281	-.296	1.000					
Fatigue	-.334	.006	-.316	.041	.123	.174	-.070	1.000				
Social Affection	-.212	-.022	.072	.200	-.115	.360	-.151	.458**	1.000			
Sadness	.071	.439	.256	.406	.510*	-.169	.504*	.218	.174	1.000		
Egotism	-.114	.192	-.208	.338	.299	.395	-.234	.152	.268	.060	1.000	
Role-taking	.345	.081	.153	-.290	.087	-.245	.043	-.250	-.164	-.233	-.411	1.000

*p<.05
**p<.01
N = 18

In the cell defined by high trait emotional empathy/control condition, there were no significant correlations between the mood variables and the role-taking scores (see Table 3). There were a number of significant correlations between the mood scores themselves.

In the cell defined by low trait emotional empathy/experimental condition, the only significant correlations between role-taking and mood scale scores were found. Role-taking correlated significantly positively with concentration ($p<.0065$), and negatively with fatigue ($p<.0425$), and with sadness ($p<.0054$). This cell also contained the largest number of significant correlations (see Table 4).

The last cell was defined by low trait emotional empathy/control condition. In this cell there were several significant correlations among the mood scale scores themselves, but no significant correlations between role-taking and mood scores as shown in Table 5.

These results indicate that Hypothesis 3, which predicted that under all conditions the pattern of positive correlations between the negative emotions experienced and role-taking skills and negative correlations between the positive emotions experienced and role-taking skills would be found, was not supported.

Effect of Trait Emotional Empathy and Induced Negative Affect

To assess the effect of trait emotional empathy and pre-exposure to a negative affect inducing tape on the subject's emotional responses, a two-by-two multivariate analysis of variance was performed. To form the first independent variable subjects were divided into two groups on the basis of their scores on the Emotional Empathy Scale. Subjects scoring above the mean on this test were assigned to the high group and

Table 3. Within Cell Correlation Coefficients: High Trait Emotional Empathy/Control Condition

	1	2	3	4	5	6	7	8	9	10	11	12
Anxiety	1.000											
Depression	.776**	1.000										
Hostility	.533*	.692**	1.000									
Aggression	.358	.315	.269	1.000								
Anxiety - MACL	.373	.271	.046	.659**	1.000							
Surgency	-.200	-.333	-.061	.081	.012	1.000						
Concentration	.101	-.185	-.173	.131	.180	.152	1.000					
Fatigue	.190	.270	.072	.369	.468*	-.032	.247	1.000				
Social Affection	-.306	-.497*	-.548*	-.029	.110	.580*	.303	.165	1.000			
Sadness	.589**	.482*	.160	.729**	.740**	.020	.207	.590**	.061	1.000		
Egotism	.140	.013	.099	.461*	.570**	.353	.104	.285	.228	.579**	1.000	
Role-taking	-.141	.056	-.023	.215	.012	.126	.231	-.073	-.100	.089	.063	1.000

*p<.05
**p<.01
N = 17

Table 4. Within Cell Correlation Coefficients: Low Trait Emotional Empathy/Experimental Condition

	1	2	3	4	5	6	7	8	9	10	11	12
Anxiety - AACL	1.000											
Depression	.859**	1.000										
Hostility	.901**	.719**	1.000									
Aggression	.677**	.476*	.688**	1.000								
Anxiety - MACL	.762**	.537*	.691**	.739**	1.000							
Surgency	-.547*	-.686**	-.437	.093	-.234	1.000						
Concentration	-.066	-.413	.115	.065	-.012	.240	1.000					
Fatigue	-.014	.174	-.226	-.328	-.096	-.408	-.210	1.000				
Social Affection	-.640**	-.700**	-.499*	-.132	-.394	.802**	.131	-.103	1.000			
Sadness	.391	.501*	.134	.350	.492*	-.159	-.509*	.448	-.202	1.000		
Egotism	.230	.120	.292	.523*	.314	.141	.250	.019	.280	.170	1.000	
Role-taking	.025	-.143	.211	.038	.111	.079	.632**	-.492*	-.054	-.643**	-.006	1.000

*p<.05
**P<.01
N = 18

Table 5. Within Cell Correlation Coefficients: Low Trait Emotional Empathy/control Condition

	1	2	3	4	5	6	7	8	9	10	11	12
Anxiety - AACL	1.000											
Depression	.660**	1.000										
Hostility	.522*	.653**	1.000									
Aggression	-.265	-.180	-.510*	1.000								
Anxiety - MACL	.467*	.421	.220	.527*	1.000							
Surgency	-.451*	-.437*	-.595*	.633**	.047	1.000						
Concentration	-.308	-.162	-.247	.255	.183	.180	1.000					
Fatigue	-.104	.132	.034	.595**	.374	.238	-.088	1.000				
Social Affection	-.551*	-.409	-.600**	.377	-.128	.595**	.379	-.140	1.000			
Sadness	.345	.278	.050	.538*	.890**	.126	.343	.307	.139	1.000		
Egotism	.000	.194	-.069	.631**	.465*	.344	.162	.375	.220	.431	1.000	
Role-taking	-.283	-.061	-.160	.372	.081	-.077	.327	.164	.234	.131	.241	1.000

*p<.05
**p<.01
N = 19

subjects below the mean to the low group. The other independent variable consisted of the subject's assignment to either the experimental or control condition. The dependent variables were the eleven mood scale scores: three from the AACL and eight from the MACL. To assess the effect of these two independent variables on the role-taking scores, a two-by-two analysis of variance was performed with the role-taking scores as the dependent variable.

Hypothesis 4. On the test of the effectiveness of the trait emotional empathy as a predictor of the level of a subject's emotional response in this situation, the multivariate F test was not significant ($F = .819$, $p<.717$). None of the univariate F tests for each mood variable were significant either as shown by Table 6. Thus the hypothesis that subjects in the higher group on the Emotional Empathy Scale would display a larger emotional response under both conditions was not supported.

Hypothesis 5. When the effectiveness of the trait emotional empathy as a predictor of the subject's role-taking response was assessed, no significant differences were found as shown in Table 7. Thus Hypothesis 5, which predicted that subjects in the higher group on the Emotional Empathy Scale would display higher level role-taking skills, was not supported.

Hypothesis 6. When the effect of pre-exposure to a negative affect inducing tape on the subject's immediate emotional response to a stimulus interaction tape was assessed, there was a significant multivariate F ($F = 2.198$, $p<.028$) and several of the univariate F's for each variable were also significant as shown in Table 8. Significant univariate F's were found for depression, hostility, aggression, surgency, and social affection. Only one root developed from this analysis and the

Table 6. Test of the Effect of Trait Emotional Empathy on Mood Scores: Univariate F Tests

Variable	MS	F(1.65)	P Less Than
Anxiety - AACL	4.607	0.448	0.506
Depression	13.144	0.409	0.525
Hostility	0.130	0.009	0.925
Aggression	0.023	0.006	0.940
Anxiety - MACL	0.003	0.000	0.983
Surgency	4.190	0.728	0.397
Concentration	9.769	2.053	0.157
Fatigue	6.076	0.657	0.421
Social Affection	4.616	0.657	0.421
Sadness	0.553	0.088	0.767
Egotism	5.602	1.808	0.183

N = 69

Table 7. The Effect of Level of Trait Emotional Empathy and Pre-exposure to a Negative Mood Inducing Tape on Role-Taking Scores: Analysis of Variance

Source	df	MS	F	P Less Than
Level of Emotional Empathy (E)	1	3.814	0.118	0.732
Pre-exposure (X)	1	42.406	1.315	0.256
X by E	1	3.504	0.109	0.743

N = 69

standardized discriminant function coefficients are reported in Table 9. However, these differences were not in the direction predicted by Hypothesis 6 as shown by the list of means for these variables in Table 10. Subjects who were exposed to a negative affect inducing experience prior to listening to a tape of an interaction between several people scored significantly higher on the level of negative emotions displayed and lower on the positive emotions displayed than subjects who listened to a neutral tape prior to the second tape.

Hypothesis 7. When the effect of pre-exposure to a negative affect inducing experience on the subject's role-taking response to a stimulus interaction tape was assessed, no significant differences were found as shown by Table 7. Thus Hypothesis 7, that subjects who were exposed to a negative affect inducing tape prior to listening to an interaction tape would display a lower level of role-taking skills than subjects who were pre-exposed to a neutral tape, was not supported.

Hypotheses 8, 9, 10, & 11. Because of the failure of trait emotional empathy to reach significance as a predictor of either cognitive or emotional responses in this situation, naturally the ordered sequence of response scores as set forth in Hypotheses 8, 9, 10, and 11 was not supported since this ordering presupposed the existence of a main effect for trait emotional empathy. However, the multivariate test for the interaction between trait emotional empathy and pre-exposure to a negative affect inducing experience approached significance ($F = 1.685$, $p<.101$) when the mood scale scores were used as the dependent variables. None of the univariate F's were significant as shown in Table 11. Here too only one root was extracted and the standardized discriminant function coefficients are reported in Table 12. When the means for each group

Table 8. Test of the Effect of Exposure to a Negative Mood Inducing Tape on Mood Scores: Univariate F Tests

Variable	MS	F(1,65)	P Less Than
Anxiety - AACL	24.041	2.338	0.131
Depression	168.535	5.245	0.025
Hostility	84.945	5.781	0.019
Aggression	28.659	7.172	0.009
Anxiety - MACL	8.471	1.496	0.226
Surgency	34.169	5.936	0.018
Concentration	0.000	0.000	0.995
Fatigue	14.736	1.594	0.211
Social Affection	53.198	7.571	0.008
Sadness	4.225	0.674	0.415
Egotism	5.698	1.839	0.180

N = 69

Table 9. Test of the Effect of Pre-exposure to a Negative Mood Inducing Tape on Mood Scores: Standardized Discriminant Function Coefficients

	1
Anxiety - AACL	-0.178
Depression	0.037
Hostility	0.137
Aggression	0.957
Anxiety - MACL	-0.076
Surgency	-0.444
Concentration	0.221
Fatigue	0.331
Social Affection	-0.357
Sadness	-0.319
Egotism	-0.377

Table 10. List of Means for the Mood Variables for the Experimental and Control Conditions

Variable	Experimental Mean	Control Mean
Anxiety - AACL	8.323	7.143
Depression	18.412	15.286
Hostility	10.677	8.458
Aggression	2.118	.829
Anxiety - MACL	2.530	1.829
Surgency	1.735	3.143
Concentration	6.118	6.115
Fatigue	4.353	3.428
Social Affection	3.529	5.286
Sadness	2.323	1.829
Egotism	.882	1.457

are compared, a pattern emerges in which subjects in the higher group on Emotional Empathy Scale scores obtain the higher emotional response scores in the experimental condition while subjects in the lower group on these scores obtain the higher scores under the control condition. This pattern persists for all of the mood scale scores except surgency, social affection, and egotism. See Table 13 for a list of the means and standard deviations for each variable.

No significant interaction effect was found when the role-taking scores were used as the dependent variable as shown in Table 7 ($F = .109$, $p < .743$). The actual means and standard deviations for role-taking scores within each cell are reported in Table 14.

Additional Analyses

In addition to the proposed analyses, the subjects' responses on the Affect Adjective Check List, under the instructions to respond as if they were the female character, were analyzed by means of a two-by-two analysis of variance for each of the variables: anxiety, depression, and hostility. As in the earlier analyses the first independent variable was formed by dividing the subjects into two groups on the basis of their scores on the Emotional Empathy Scale. The other independent variable consisted of the subject's assignment to either the experimental or control condition. When anxiety and depression were used as the dependent variables, no significant effects for either the level of trait emotional empathy or for the condition under which they listened to the tape were found. Also there was no significant interaction effect. These results are shown in Table 15 and Table 16. With hostility as the dependent variable (see Table 17) the two independent variables again showed no

Table 11. Test of the Effect of the Interaction Between Trait Emotional Empathy and Pre-exposure to a Negative Mood Inducing Tape on Mood Scores: Univariate F Tests

Variable	MS	F(1,65)	P Less Than
Anxiety - AACL	10.741	1.045	0.311
Depression	85.728	2.668	0.107
Hostility	42.874	2.918	0.092
Aggression	2.738	0.685	0.411
Anxiety - MACL	1.304	0.230	0.633
Surgency	4.559	0.792	0.377
Concentration	15.965	3.355	0.072
Fatigue	9.290	1.005	0.320
Social Affection	0.270	0.038	0.845
Sadness	12.435	1.984	0.164
Egotism	3.231	1.043	0.311

N = 69

Table 12. Test of the Effect of the Interaction Between Trait Emotional Empathy and Pre-exposure to a Negative Mood Inducing Tape on Mood Scores: Standardized Discriminant Function Coefficients

	1
Anxiety - AACL	-0.076
Depression	0.702
Hostility	0.305
Aggression	-0.179
Anxiety - MACL	0.514
Surgency	-0.138
Concentration	0.514
Fatigue	-0.085
Social Affection	0.573
Sadness	-0.869
Egotism	-0.204

Table 13. List of Means and Standard Deviations for Each Mood Variable Within Each Cell

		Anxiety - AACL	Depression	Hostility	Aggression
High Trait Emotional Empathy/ Experimental Condition	M	8.944	19.889	11.389	1.944
	SD	2.313	4.071	3.090	2.413
Low Trait Emotional Empathy/ Experimental Condition	M	7.625	16.750	9.875	2.313
	SD	3.519	6.028	4.349	2.182
High Trait Emotional Empathy/ Control Condition	M	7.000	14.563	7.563	1.063
	SD	3.651	5.831	4.604	1.879
Low Trait Emotional Empathy/ Control Condition	M	7.263	15.895	9.211	0.632
	SD	3.263	6.463	3.259	1.422
		Anxiety - MACL	Surgency	Concentration	Fatigue
High Trait Emotional Empathy/ Experimental Condition	M	2.667	1.722	6.222	3.722
	SD	2.590	1.965	2.211	3.375
Low Trait Emotional Empathy/ Experimental Condition	M	2.375	1.750	6.000	5.063
	SD	2.500	2.113	2.066	2.435
High Trait Emotional Empathy/ Control Condition	M	1.688	3.688	5.188	3.500
	SD	2.024	2.469	2.257	2.921
Low Trait Emotional Empathy/ Control Condition	M	1.947	2.684	6.895	3.368
	SD	2.345	2.888	2.183	3.253
		Social Affection	Sadness	Egotism	
High Trait Emotional Empathy/ Experimental Condition	M	3.833	1.833	0.944	
	SD	2.176	2.093	1.798	
Low Trait Emotional Empathy/ Experimental Condition	M	3.188	2.875	0.813	
	SD	2.455	3.117	1.109	
High Trait Emotional Empathy/ Control Condition	M	5.500	2.188	2.000	
	SD	3.141	2.762	2.221	
Low Trait Emotional Empathy/ Control Condition	M	5.105	1.526	1.000	
	SD	2.767	2.010	1.732	

Table 14. List of Means and Standard Deviations of Role-Taking Scores Within Each Cell

		Role-Taking
High Trait Emotional Empathy/ Experimental Condition	M	10.889
	SD	5.820
Low Trait Emotional Empathy/ Experimental Condition	M	10.875
	SD	6.260
High Trait Emotional Empathy/ Control Condition	M	9.813
	SD	6.014
Low Trait Emotional Empathy/ Control Condition	M	8.895
	SD	4.653

significant differences. However, there was a significant interaction effect. The mean ratings of the female character on each variable and under each experimental condition are shown in Table 18. The overall ratings of the female character are given in Table 19.

Table 15. The Effect of Level of Trait Emotional Empathy and Pre-exposure to a Negative Mood Inducing Tape on the Rating of Anxiety in the Female Character: Analysis of Variance

Source	df	MS	F
Level of Emotional Empathy (E)	1	1.153	.168
Pre-exposure (X)	1	.347	.051
X by E	1	7.569	1.103

Table 16. The Effect of Level of Trait Emotional Empathy and Pre-exposure to a Negative Mood Inducing Tape on the Rating of Depression in the Female Character: Analysis of Variance

Source	df	MS	F
Level of Emotional Empathy (E)	1	1.345	.057
Pre-exposure (X)	1	.851	.036
X by E	1	1.082	.046

Table 17. The Effect of Level of Trait Emotional Empathy and Pre-exposure to a Negative Mood Inducing Tape on the Rating of Hostility in the Female Character: Analysis of Variance

Source	df	MS	F
Level of Emotional Empathy (E)	1	3.761	0.310
Pre-exposure (X)	1	3.761	0.310
X by E	1	100.695	8.312*

*P<.01

Table 18. Mean Ratings of the Female Character on the Zuckerman Affect Adjective Check List Within Each Condition

Condition	Anxiety	Depression	Hostility
High Trait Emotional Empathy/ Experimental Condition	13.777	26.111	17.611
High Trait Emotional Empathy/ Control Condition	14.588	26.059	19.588
Low Trait Emotional Empathy/ Experimental Condition	14.176	26.118	19.588
Low Trait Emotional Empathy/ Control Condition	13.684	26.579	16.789

Table 19. Overall Ratings of the Female Character on the Zuckerman Affect Adjective Check List

Variable	Mean	SD	Range
Anxiety	14.042	2.569	8-20
Depression	26.225	4.732	15-38
Hostility	18.268	2.432	13-28

CHAPTER IV

DISCUSSION

This study involved basically an attempt to look at the relationship between two variables that have both been labeled "empathy" in adults, the cognitive interpretation of the emotions of another and the emotional response to those emotions. Since it was felt that the form both of these would take would be a function both of the tendency to perform them that the person brought to the situation and the structure of the situation itself, examples of both of these aspects were chosen. The purpose of this was to study their effect on the expression of the two variables and their effect on the nature of the relationship between the two. Since empathy has been conceived as a process and not as a trait and as a process involving both cognitive and emotional aspects, this study was an attempt to study one instance of empathic responding as it is manifest in these two aspects.

Relationship Between the Affective and Cognitive Variables

The first two hypotheses of this study dealt with the predicted relationship between a person's emotional response to the expressed emotions of another and his cognitive interpretation of the same stimulus. It was predicted that there would be a significant correlation between the level of a person's response on each of these variables. This was

hypothesized because it was felt that the pain engendered by a high level of emotional responding to this type of stimulus would serve as a motivating force for the development of higher level cognitive interpretative skills. However, the results of this study do not support this type of reasoning. In fact, the only significant overall correlation between any of the emotional response variables and the cognitive variable, role-taking, was between role-taking and level of concentration. This is not surprising since one would predict that with a cognitive task such as role-taking, an increase in concentration would be associated with an increase in performance. The third hypothesis which predicted the same types of significant correlations within the varying experimental situations as were predicted overall was also not supported. When looking at the within cell correlations, it appears that there are no significant correlations between role-taking and any of the emotional response scores except in the low trait emotional empathy/experimental condition. In this case, role-taking correlated significantly positively with concentration and negatively with fatigue and sadness. Since there is no reason to predict that subjects under this condition would be more sensitive to the effect of concentration and fatigue than under any of the other conditions, these findings may be due to chance as a result of the large number of correlations made.

If, in fact, the relationship between these two variables is not the one hypothesized, the question remains of what the relationship is or if there is one at all. Since the purpose of this study was to explore the relationship between these two variables, it is important to consider some of the alernatives for this relationship and the implications of the results of this research for them.

If one accepts the premise that both of these variables are important

aspects of empathy and that they are in some way related, one possibility is that this relationship varies from situation to situation in form and degree. For example, it may be that in some situations a more cognitive response is most appropriate while in others a more emotional aspect is called for and in some both may be expected. Thus the degree of relationship between the two predicted would vary depending on the demands of the situation. This variation can be illustrated by considering the difference between the emotional response one might experience when observing a stranger who is upset and the complex cognitive and emotional response possibilities that may exist for a married couple having a disagreement. In other words, there may be times when we can respond emotionally without much understanding or understand without being very involved emotionally and times when we do both. Therefore it is impossible to rule out the existence of a relationship between the two variables on the basis of this study alone. In future work perhaps a continuum of situations could be set up that would be expected to vary the possibilities for this relationship. One way might be to use dyads and to study the means, both cognitive and emotional, that they use to understand each other's response to a particular stimulus, such as rejection by a third party. In order to vary the possible relationship between the variables in this situation one could vary the composition of the dyad from strangers to friends. The present study is limited in this type of variability because of the restricted nature of the relationship between the subjects and the object of their empathy, a character in a tape recording.

Another possible alternative for the relationship between these two variables is that there is a single relationship between these two components, but it is not the simple linear one tested here. It may be

curvilinear with an intense emotional response actually interfering with the effectiveness of cognitive understanding. The greatest degree of understanding may actually be associated with only moderate emotional responding. In order to test this hypothesis one would need to vary the level of intensity of the stimulus used and thus the level of the emotional response. What may be occurring in the present study is that because of the limited range in intensity of the stimuli used, it may be sampling from only a portion of the curve and thus failing to find the relationship. In order to test this alternative one would need to sample from stimuli of varying intensity levels.

A third, and perhaps most intriguing alternative, is that this study is an actual reflection of the existing state of affairs and there is no relationship between the two variables to be predicted or found, or rather no relationship as this study has defined relationship. It may be that these two variables, emotional responding and cognitive understanding, are two separate skills that can have independent expression in a situation apart from actual empathy. In previous studies both have been conceived of as empathy and measured as such. Here an attempt was made to combine the two using the same stimulus and to call it empathy. However, this may be an instance in Gestalt terms of the whole being more than the sum of its parts. Empathy may not be just a combination of these skills in varying amounts but a special type of synthesis of them. Thus empathy would be a third type of response that could coexist with the other two. Some understanding and some emotional response might be necessary for empathy to occur but not sufficient. This is particularly interesting in light of some additional data collected in this study. In addition to the hypothesized elements of the study, subjects were asked to fill

out the Zuckerman Affect Adjective Check List as if they were the female character in the study. This task can be seen to involve elements of role-taking because the subject is told to put herself in the place of the character, but it is not with the more cognitive material and scoring as in the Role-Taking Task. Instead the subject is giving her interpretation of the emotional responses of the character. The results of this administration indicate that the only significant difference found was in an interaction effect on the hostility variable. The finding of greatest interest is the striking degree of agreement between the subjects on their perceptions of the emotions of this character as shown by the small standard deviations on the total ratings (see Table 19). Though they differed in the condition under which they heard the tape, which made a significant difference in their own emotional reaction following it, this did not seem to affect their ratings of her emotions. Even though both variables, emotional response and cognitive interpretation, were present in this situation and showed a wide range of variability, subjects were somehow able to develop a rather uniform conception of the character's feelings. This offers some interesting possibilities. Perhaps in the attempt to analyze the components of empathy and to study their relationship to one another, the essential nature of the construct, empathy, was lost.

Level of Trait Emotional Empathy as a Predictor of Empathic Responding

The fourth and fifth hypotheses of this study made an attempt to predict the level of a person's emotional and cognitive responses within this situation on the basis of her score on the Emotional Empathy Scale developed by Mehrabian and Epstein (1972). Because this scale had been

developed explicitly to measure a person's tendency to respond to the emotional experiences of others and had been successful in predicting behavior, such as reduced aggressiveness or increased helping behavior, that might be conceptualized as involving this tendency, it was thought that it might also predict their verbal descriptions of their actual emotional responses to emotional stimuli. However, it failed to do so thus raising the question of whether this is a result of some aspect of the construction of the scale itself or a result of the nature of the construct it measures.

In their report of the construction of their scale Mehrabian and Epstein (1972) reported the results of a factor analysis done with their scale in which various subscales such as "Extreme Emotional Responsiveness," or "Susceptibility to Emotional Contagion" were found. These subscales were intercorrelated and the authors view them as related aspects of the construct they call emotional empathy. It may be that the total score which they use is sufficient to predict aggressive behavior, but perhaps in order to predict a verbal self-description, which the mood adjective check lists are, from a verbal self description which the Emotional Empathy Scale is, it would be necessary to select the particular subscale that is most appropriate. Here it might be the subscale called "Tendency to be Moved by Others' Negative Emotional Experiences." Unfortunately it is impossible to test this hypothesis here because the authors do not report the items which load on each of the subscales. Future research exploring this possibility would be interesting.

The other suggestion, that this may be a function of the nature of the construct being measured, received some support from an unexpected but interesting result of this experiment, that is, the interaction effect

between pre-exposure to a negative affect inducing tape and the level of trait emotional empathy with the emotional response scores as dependent variables. Although this effect failed to attain statistical significance, the interaction pattern holds true for all of the variables except surgency, social affection, and egotism.

This interaction pattern indicated that under the experimental condition subjects who were high in trait emotional empathy gave the larger responses, while in the control condition subjects who were low in trait emotional empathy had the higher mean response scores. It is possible to gain a clearer understanding of these findings by looking at them in relationship to the findings of Mehrabian and Epstein (1972), only this time conceptualizing both studies as studies of arousal rather than empathy. This seems appropriate since these authors report that "empathic tendency was a direct correlate of arousal . . ." (p. 540). The findings of their study suggested that the immediacy of the victim was the key factor in determining the relationship of trait emotional empathy to aggression. When the victim was present, which might be conceptualized as a high arousal situation, the subjects high in trait emotional empathy aggressed less, but when the victim was distant, there was no significant difference between the two levels of trait emotional empathy in their measured aggression. The actual results of their experiment indicate that within the non-immediate victim cell, the high trait emotional empathy subjects had a higher mean aggression score than the low trait emotional empathy subjects although this difference was not statistically significant. These results are very similar to those of the current study if one conceptualizes the subjects within the experimental condition as being under a higher level of arousal than those under the control condition.

Here under the experimental condition subjects who were higher in the trait emotional empathy displayed a greater emotional response than subjects who were lower in this trait. However, under the control condition, the reverse was true. This suggests that this trait of one's tendency to react emotionally to the perceived emotions of others requires some level of arousal as a trigger or cue for its expression. When this is present the trait is in effect and subjects who are higher in this tendency actually react more emotionally. However, when this cue is not present, there may be no difference in the level of response displayed based on this trait. This idea of the necessity of some type of cue or structure to give form to a person's emotional response is not new but in fact was discussed earlier with reference to Stanley Schachter's (1971) work. Here he suggested that subjects react emotionally to the extent that they are physiologically aroused and that their tendency to label this arousal as emotion is determined by the presence or absence of appropriate cognitive circumstances. What this present study may be is simply an instance of this conception of Schachter's at work, with the added dimension of individual differences within the subjects on their tendency to be aroused emotionally at all.

Effect of the Situational Variable

The sixth and seventh hypotheses of this study attempted to predict the effect of a situational variable, the mood of the empathizer, on the emotional and cognitive responses of the subjects to the interaction tape. Since both of the variables have been shown by previous research to be affected by situational variables, it was felt to be important to know if they could be affected by the same variable. Also if they were

affected differently by situational variables, it might change the predictions of the nature of the relationship between them.

Effect of Mood on the Emotional Response

It appears that for the emotional response aspect of empathy, there is a significant effect for the presence of a negative mood prior to listening to the interaction tape. Persons who listen to the tape after the inducement of a negative mood have a larger emotional response than persons who have a neutral experience prior to listening to the tape.

From the results of previous research it had been predicted that the presence of a negative mood would actually interfere with the response to the second tape. However, exactly the opposite effect was found, the presence of a negative pre-set enhanced the emotional response. This makes sense if one considers again not the empathy aspects of the situation but the arousal ones as in the previous section. In their work Zillman et al. (1974) had found that pre-exposure to a high excitation film was associated with decreased subject involvement in a subsequent film. In a second follow-up study they found that this result was changed and involvement was actually enhanced when subjects were given time and instructions between the two films to enable them to make a cognitive adjustment. In the present study the interference effect was expected because no opportunity was given for cognitive adjustment and it was felt that part of the interference effect was due not just to the excitation level produced but to the degree of involvement on the part of the subject that this engendered. However, this was not the case and this may mean that involvement on the part of the subject was not an important factor and that this is just an arousal phenomena. If so, the

negative affect inducing tape in this study may be conceived of as inducing only a moderate level of arousal, especially when compared with the particularly vivid films used in the Zillman et al. (1974) study. Thus the subjects in the second Zillman et al. (1974) study with their level of arousal dampened by cognitive adjustment and the subjects in this study with only a moderate level of initial arousal would be in a very similar arousal state at the time they were subjected to the second stimulus. This would explain why both responded similarly with an increase in emotional response to the second stimulus. The effect of arousal on the response to an emotional stimulus may then be conceived of as varying with the level of arousal employed with a moderate level enhancing response while a high level interferes with it.

Effect of Mood on the Cognitive Response

The results of this study indicate that there is no significant effect of mood on the role-taking responses. Thus the question of the responsivity of both variables, emotional response and cognitive understanding, to the same situational variable, mood, has received some answer. Though emotional response was quite sensitive to the manipulation, role-taking was not. It must be conceded, however, that role-taking might have been responsive if the manipulation was of a higher level of intensity. That question must be left to future research.

The conceptualization of the results of this study as actually being a function of the level of arousal induced by the initial tapes is also supported if one returns to the means for this variable reported in Table 14. Though the differences are not statistically significant, the means for the group that heard the negative affect inducing tape initially are somewhat higher. The arousal induced by this tape may be associated with

increased attention to the subsequent stimulus and thus a higher level cognitive interpretation of it.

In general, the results of this analysis of the effect of the situational variable mood on both of the response variables in this study support the findings reviewed in the first section of this discussion. Not only is there a lack of correlation between the two variables, but they are differentially sensitive to this particular situational variable. Thus the conception of their independence received more support.

Summary

In order to understand the meaning of this study as a whole, it is necessary to return to its original purpose and the conception on which it was based. A review of the literature on the measurement of the process of empathy in adults suggested that it was being measured in two different ways, as an emotional response to the expression of emotions by others and as a cognitive interpretation of the feeling and thoughts of another. It seemed intuitively appealing that there were actually aspects of both of these variables in the empathic response of an adult and the purpose of this study was to look at the relationship between them by combining them within the same study. In this way both responses would be made to the same stimulus and the effect of the same situational variable on them both could be obtained.

Surprisingly, however, as reviewed in the previous sections, no correlation between the two variables was found in this study. Also emotional response was sensitive to the situational variable employed while cognitive response was not. Lastly the Emotional Empathy Scale in interaction with the nature of the initial tape came close to predicting

level of emotional response, but not level of cognitive response. In short, the results of this study suggest that the two response variables measured here were functioning independently of each other although it was conceded in each preceding section that future research may find a relationship between them.

The question arises of where in this study is "empathy." One suggestion is that this study did not go far enough in its attempt to combine these two variables. Perhaps, as suggested in the first section of the discussion, neither is really empathy. Both are responses that can be found when one person is reacting to the emotions of another but perhaps what is commonly thought of as empathy is a separate type of response. Skills in understanding and some level of emotional responding may be necessary to react empathically to the emotions of another, but it is not just combining these skills that makes the response empathy but synthesizing them in a particular way. This is particularly cogent in light of the subjects' ratings of the emotions of the girl in the tape. Although they heard the tape under differing conditions and displayed a large range of emotional responses and the entire range of the level of their cognitive responses to this tape, they achieved a striking level of uniformity in their perceptions of her feelings. An interesting direction for future research would be to take a response of this type and to study the effectiveness of the level of emotional response and cognitive skills in predicting accuracy in it.

If empathy is indeed a response separate from the two variables measured in this study, one may ask what has been learned with respect to these two variables. With respect to a person's emotional response to an emotional interaction between others, the results of this study

suggest that the level of a person's response is a function of his state of arousal when he perceives the interaction. Also his description of his own tendencies to respond emotionally to others is only predictive of his actual response in this situation when the variable of arousal level is taken into account. With respect to the cognitive variable, role-taking, the results suggest that it is not or only mildly sensitive to the effects of arousal at least in the level used in this study.

Problems in Interpretation

At this point it seems important to review some aspects of this study that present problems in the interpretation of the results. One of the major ones is in the nature of the moods induced by the first tape played to the experimental group. As shown by the results of the pilot study this tape produces significant increases in depression, hostility, anxiety, and sadness and significant decreases in social affection and surgency. It may be that the negative hostile mood that this tape induced caused the stronger reaction of these subjects following the second tape, not because of its arousal level, as discussed earlier, but because of the nature of the task required of them. It was noted by the experimenter that subjects under this condition were often more restless and irritable than under the other and complained more often about inability to attend to the second tape and about the boring nature of the tasks. Therefore it may be that their original reaction was intensified by the anger they felt over the task they had to perform and it is this intensification that is being reported.

Another problem is in the use of the mood scales themselves. Although this study goes further in its specification of the specific

moods being manipulated than did Zillman et al. (1974) who defined the hedonic tone of their tapes on a pleasant-unpleasant dimension, it may not be far enough for the purposes of this type of study. As was suggested by the previous paragraph a mood of hostility may have a very specific effect on a subjects response. This may be quite different from the effect of another mood such as depression that may also be thought of as negative in tone. To fully understand the effect of mood on empathy, it may be necessary to develop stimuli with a narrower and more specific range of the moods they manipulate. Other problems and limitations exist, some of which have been presented and discussed within the preceding sections of this discussion. Although there are limitations on the interpretability of the results here, they do provide answers to some of the original questions and suggest a different way of looking at empathy from the one with which this study began.

APPENDICES

APPENDIX A

SUBJECT INFORMATION SHEET

Information Sheet

Subject Number:

Age:

Year in School:

Number of Children in your family:

Your place in the birth order:
only child
first born
youngest
middle
other (i.e. 2nd of 4), please specify_____.

Major:

APPENDIX B

EMOTIONAL EMPATHY SCALE

1. It makes me sad to see a lonely stranger in a group.

+4 +3 +2 +1 0 -1 -2 -3 -4

2. People make too much of the feelings and sensitivity of animals.

+4 +3 +2 +1 0 -1 -2 -3 -4

3. I often find public displays of affection annoying.

+4 +3 +2 +1 0 -1 -2 -3 -4

4. I am annoyed by unhappy people who are just sorry for themselves.

+4 +3 +2 +1 0 -1 -2 -3 -4

5. I become nervous if others around me seem to be nervous.

+4 +3 +2 +1 0 -1 -2 -3 -4

6. I find it silly for people to cry out of happiness.

+4 +3 +2 +1 0 -1 -2 -3 -4

7. I tend to get emotionally involved with a friend's problems.

+4 +3 +2 +1 0 -1 -2 -3 -4

8. Sometimes the words of a love song can move me deeply.

+4 +3 +2 +1 0 -1 -2 -3 -4

9. I tend to loose control when I am bringing bad news to people.

+4 +3 +2 +1 0 -1 -2 -3 -4

10. The people around me have a great influence on my moods.

+4 +3 +2 +1 0 -1 -2 -3 -4

11. Most foreigners I have met seemed cool and unemotional.

+4 +3 +2 +1 0 -1 -2 -3 -4

12. I would rather be a social worker than work in a job training center.

+4 +3 +2 +1 0 -1 -2 -3 -4

13. I don't get upset just because a friend is acting upset.

+4 +3 +2 +1 0 -1 -2 -3 -4

14. I like to watch people open presents.

+4 +3 +2 +1 0 -1 -2 -3 -4

15. Lonely people are probably unfriendly.

+4 +3 +2 +1 0 -1 -2 -3 -4

16. Seeing people cry upsets me.

+4 +3 +2 +1 0 -1 -2 -3 -4

17. Some songs make me happy.

+4 +3 +2 +1 0 -1 -2 -3 -4

18. I really get involved with the feelings of the characters in a novel.

+4 +3 +2 +1 0 -1 -2 -3 -4

19. I get very angry when I see someone being ill-treated.

+4 +3 +2 +1 0 -1 -2 -3 -4

20. I am able to remain calm even though those around me worry.

+4 +3 +2 +1 0 -1 -2 -3 -4

21. When a friend starts to talk about his problems, I try to steer the conversation to something else.

+4 +3 +2 +1 0 -1 -2 -3 -4

22. Another's laughter is not catching for me.

+4 +3 +2 +1 0 -1 -2 -3 -4

23. Sometimes at the movies I am amused by the amount of crying and sniffling around me.

+4 +3 +2 +1 0 -1 -2 -3 -4

24. I am able to make decisions without being influenced by people's feelings.

+4 +3 +2 +1 0 -1 -2 -3 -4

25. I cannot continue to feel OK if people around me are depressed.

+4 +3 +2 +1 0 -1 -2 -3 -4

26. It is hard for me to see how some things upset people so much.

+4 +3 +2 +1 0 -1 -2 -3 -4

27. I am very upset when I see an animal in pain.

+4 +3 +2 +1 0 -1 -2 -3 -4

28. Becoming involved in books or movies is a little silly.

+4 +3 +2 +1 0 -1 -2 -3 -4

29. It upsets me to see helpless old people.

+4 +3 +2 +1 0 -1 -2 -3 -4

30. I become more irritated than sympathetic when I see someone's tears.

+4 +3 +2 +1 0 -1 -2 -3 -4

31. I become very involved when I watch a movie.

+4 +3 +2 +1 0 -1 -2 -3 -4

32. I often find that I can remain cool inspite of the excitement around me.

+4 +3 +2 +1 0 -1 -2 -3 -4

33. Little children sometimes cry for no apparent reason.

+4 +3 +2 +1 0 -1 -2 -3 -4

APPENDIX C

INSTRUCTIONS

Today we will be trying to standardize a new test of imagination. Very often before visual stimuli have been used in these tests. Today the stimuli will be auditory. You will be listening to two tapes, the second immediately following the first. After the second tape you will open this booklet immediately and respond to the questions and materials inside. Please pay close attention to both tapes and do not open the booklet until the second tape has finished.

APPENDIX D

MOOD ADJECTIVE CHECK LIST

Each of the following words describes feelings or moods. Please use the list to describe your feelings at the moment you read each word. If the word definitely describes how you feel at the moment you read it, circle the double check (vv) to the right of the word. For example, if the word is relaxed and you are definitely feeling relaxed at the moment circle the vv as follows:

relaxed vv v ? no. (This means that you are definitely feeling relaxed at the moment.)

If the word only slightly applies to your feelings at the moment, circle the single check (v) as follows:

relaxed vv v ? no. (This means that you feel slightly relaxed at the moment.)

If the word is not clear to you or you cannot decide whether it applies to your feelings at the moment, circle the question mark as follows:

relaxed vv v ? no. (This means that you cannot decide whether you are relaxed or not.)

If you definitely decide that the word does not apply to your feelings at the moment, circle the no as follows:

relaxed vv v ? no. (This means that you are definitely not relaxed at the moment.)

Work rapidly. Your first reaction is best. Work down the first column, then go to the next. Please mark all words. This should take only a few minutes. Please begin.

angry vv v ? no
clutched up vv v ? no
carefree vv v ? no
elated vv v ? no
concentrating vv v ? no
drowsy vv v ? no
affectionate vv v ? no
regretful vv v ? no
dubious vv v ? no
boastful vv v ? no
active vv v ? no
defiant vv v ? no
fearful vv v ? no
playful vv v ? no
overjoyed vv v ? no
engaged in thought vv v ? no
sluggish vv v ? no

kindly vv v ? no
sad vv v ? no
skeptical vv v ? no
egotistic vv v ? no
energetic vv v ? no
rebellious vv v ? no
jittery vv v ? no
witty vv v ? no
pleased vv v ? no
intent vv v ? no
tired vv v ? no
warmhearted vv v ? no
sorry vv v ? no
suspicious vv v ? no
self-centered vv v ? no
vigorous vv v ? no

APPENDIX E

AFFECT ADJECTIVE CHECK LIST

The following adjectives describe ways in which people can feel -- they describe various emotional states. Think about the way you feel right now. Circle those adjectives that apply to you (describe the way you feel) at this moment.

active	enthusiastic	lonely	stormy
agreeable	fearful	loving	strong
afraid	fine	lost	suffering
alive	fit	low	sunk
alone	forlorn	lucky	sympathetic
amiable	free	mad	tame
angry	friendly	mean	tense
awful	frightened	merry	tender
bitter	furious	miserable	terrified
blue	gay	nervous	terrible
calm	glad	offended	thoughtful
cheerful	gloomy	outraged	tormented
clean	good	panicky	understanding
cooperative	good-natured	peaceful	unhappy
contented	happy	pleasant	unsociable
cruel	healthy	polite	upset
desperate	hopeless	rejected	vexed
destroyed	inspired	sad	whole
disagreeable	interested	safe	wilted
discontented	irritated	secure	willful
discouraged	joyful	shaky	worrying
disgusted	kindly	steady	young
enraged			

APPENDIX F

ROLE-TAKING TEST

In the space below I want you to tell a story in your own words about what was happening in the second tape that you heard. Use your imagination and elaborate on what was on the tape. Tell what was happening at the moment, what led up to the event that you heard, what the characters were feeling and thinking, and then give the outcome.

Now I want you to respond to the same tape again. This time make believe that you are the female character and you are right in the situation. Retell the story from the point of view of this character.

Again I want you to respond to the last tape but this time pretend that you are the male character, Charlie, and you are right in the situation. Retell the story from the point of view of this character.

APPENDIX G

AFFECT ADJECTIVE CHECK LIST FOR FEMALE CHARACTER

The following adjectives describe ways in which people can feel -- they describe various emotional states. Think about the female character in the last tape that you heard. Circle those adjectives that apply to her (describe the way she felt) in the tape.

active	enthusiastic	lonely	stormy
agreeable	fearful	loving	strong
afraid	fine	lost	suffering
alive	fit	low	sunk
alone	forlorn	lucky	sympathetic
amiable	free	mad	tame
angry	friendly	mean	tense
awful	frightened	merry	tender
bitter	furious	miserable	terrified
blue	gay	nervous	terrible
calm	glad	offended	thoughtful
cheerful	gloomy	outraged	tormented
clean	good	panicky	understanding
cooperative	good-natured	peaceful	unhappy
contented	happy	pleasant	unsociable
cruel	healthy	polite	upset
desperate	hopeless	rejected	vexed
destroyed	inspired	sad	whole
disagreeable	interested	safe	wilted
discontented	irritated	secure	willful
discouraged	joyful	shaky	worrying
disgusted	kindly	steady	young
enraged			

APPENDIX H

AFFECT ADJECTIVE CHECK LIST FOR MALE CHARACTER

The following adjectives describe ways in which people can feel -- they describe various emotional states. Think about the way the male character, Charlie, felt in the last tape that you heard. Circle those adjectives that apply to him (describe the way he felt) in the tape.

active	enthusiastic	lonely	stormy
agreeable	fearful	loving	strong
afraid	fine	lost	suffering
alive	fit	low	sunk
alone	forlorn	lucky	sympathetic
amiable	free	mad	tame
angry	friendly	mean	tense
awful	frightened	merry	tender
bitter	furious	miserable	terrified
blue	gay	nervous	terrible
calm	glad	offended	thoughtful
cheerful	gloomy	outraged	tormented
clean	good	panicky	understanding
cooperative	good-natured	peaceful	unhappy
contented	happy	pleasant	unsociable
cruel	healthy	polite	upset
desperate	hopeless	rejected	vexed
destroyed	inspired	sad	whole
disagreeable	interested	safe	wilted
discontented	irritated	secure	willful
discouraged	kindly	steady	young
enraged			

APPENDIX I

FINAL EVALUATION FORM

I would now like your evaluation of and reactions to the final tape that you heard. Please circle the point on each scale that most accurately describes your reactions.

Feelings about the female character:

Liked her — Disliked her

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

Seemed real and believable — Seemed unreal

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

Her reactions were similar to my own:
Very — Not at all

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

Feelings about the male character, Charlie:
Liked him — Disliked him

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

Seemed real and believable — Seemed unreal

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

His reactions were similar to my own:
Very — Not at all

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

Reactions to the tape as a whole:
Detached — Emotionally involved

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

Calm — Excited

+5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5

APPENDIX J

RAW DATA

CODE

Column 1. Experimental (E), Control (C)
2. Emotional Empathy Score
3. Anxiety (Ruckerman)
4. Depression
5. Hostility
6. Aggression
7. Anxiety
8. Surgency
9. Concentration
10. Fatigue
11. Social Affection
12. Sadness
13. Egotism
14. Role-Taking Task
15. Anxiety -- Female Character
16. Depression -- Female Character
17. Hostility -- Female Character

RAW DATA

Subj.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	E	36	3	13	4	0	0	0	4	6	4	0	0	10	17	27	17
2	E	57	6	13	9	0	0	2	4	8	7	0	0	6	11	19	23
3	E	59	9	26	7	6	9	2	6	9	5	4	5	1	14	15	20
4	E	84	8	18	13	0	0	3	6	5	2	0	0	9	13	24	16
5	E	36	7	19	11	0	0	0	6	2	0	0	0	20	11	24	23
6	E	50	7	17	10	1	3	0	6	8	5	4	3	9	13	24	23
7	E	62	12	20	10	0	4	0	5	0	2	2	0	11	17	29	13
8	C	56	15	24	7	0	4	3	6	7	6	7	3	10	18	24	17
9	C	59	6	13	7	2	1	5	6	3	6	2	0	9	11	19	14
10	C	74	0	1	0	0	0	7	4	4	9	0	0	10	13	29	28
11																	
12	E	16	10	22	11	3	0	2	2	4	4	4	0	4	13	26	18
13	E	62	12	24	14	6	3	5	0	3	4	0	2	18	13	30	18
14	E	75	8	25	12	6	2	0	9	3	5	4	0	9	13	30	20
15	E	33	12	19	16	4	6	1	8	6	2	2	0	20	15	22	20
16	E	67	10	23	10	0	7	1	9	7	2	4	2	16	20	38	25
17	C	69	8	19	12	0	0	0	4	1	0	0	0	20	10	20	18
18	C	47	10	21	12	1	5	3	8	6	2	4	0	6	15	20	19
19	C	6	6	10	9	0	0	3	6	0	6	0	0	6	17	27	18
20	C	32	8	21	9	0	1	0	7	8	1	1	1	6	15	27	13
21	C	33	4	13	12	0	0	2	9	7	7	0	0	11	14	26	14
22	E	39	3	4	4	0	1	5	9	2	6	0	0	19	13	18	24
23	E	64	9	20	13	0	2	1	7	2	7	4	0	18	18	35	23
24	E	41	11	21	15	5	8	1	3	2	0	6	0	4	16	31	17
25	E	26	4	9	3	1	0	2	9	6	2	0	0	11	12	28	23
26	C	57	8	13	5	0	0	6	8	0	6	1	1	10	16	19	22
27	C	50	8	19	9	0	0	1	8	2	4	0	0	9	14	24	14
28	C	54	8	16	11	0	0	0	0	0	0	0	2	0	15	31	15
29	C	38	9	20	12	0	5	0	9	2	7	6	0	11	11	22	21
30	C	50	9	24	14	0	2	1	0	7	2	0	0	3	10	21	14
31	C	79	8	19	4	5	5	2	5	5	5	5	2	16	16	26	24
32	C	67	5	16	8	0	0	3	5	3	1	2	1	11	14	31	14
33	C	53	2	4	3	0	2	8	6	2	9	0	7	14	20	36	26
34	C	43	5	23	8	4	6	9	9	8	9	5	6	9	15	26	21
35	C	36	4	8	7	0	0	1	5	3	4	0	0	10	10	24	16
36	E	71	9	24	16	3	4	1	7	8	6	5	1	11	13	30	15
37	E	53	9	19	8	0	3	0	8	0	0	0	0	19	17	29	15
38	E	58	12	23	15	4	3	0	5	4	4	1	0	11	15	28	18
39	E	57	13	26	16	2	5	2	8	0	4	0	0	18	18	31	18
40	E	61	7	15	9	0	2	0	7	2	3	0	0	18	8	28	14
41	C	56	8	18	11	0	0	2	7	9	5	0	0	5	12	22	22
42	C	40	2	7	6	0	0	5	8	0	9	0	0	6	17	30	15
43	C	31	4	19	12	0	1	0	9	1	4	0	1	20	16	35	18
44	C	37	12	25	7	0	2	2	6	0	7	1	0	11	18	28	18
45	C	43	12	21	13	1	4	0	5	5	4	3	5	14	13	25	18

RAW DATA (continued)

Subj.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
46	C	67	9	12	6	4	4	2	9	8	8	8	6	5	16	23	17
47	E	41	3	11	5	2	2	5	5	7	7	7	1	3	12	26	16
48	E	46	12	26	12	5	4	0	5	9	0	9	2	6	15	27	20
49	E	22	13	24	13	4	6	1	4	6	2	6	1	11	15	29	21
50	E	62	4	12	9	1	0	0	5	6	4	2	1	10	11	28	15
51	C	79	5	14	6	1	0	5	6	1	9	2	2	20	15	28	19
52	C	42	6	10	7	0	0	6	8	0	7	0	2	2	13	23	17
53	C	36	9	13	11	0	1	6	5	4	2	0	0	7	11	24	13
54	E	46	4	11	8	7	2	7	8	0	8	0	3	18	17	27	18
55	E	68	10	20	16	5	4	3	9	0	2	6	0	3	12	18	18
56	E	45	9	22	14	1	2	0	7	5	1	2	0	18	12	32	18
57	E	15	6	13	6	0	1	2	7	6	4	0	2	9	13	26	14
58	C	48	13	17	11	1	7	0	8	2	1	4	1	5	14	31	20
59	C	21	8	12	7	0	0	4	6	0	8	2	0	6	13	30	19
60	C	74	11	22	19	5	5	6	5	5	2	6	5	15	18	33	22
61	C	91	7	14	12	0	2	6	7	2	8	0	1	3	13	20	15
62	C	29	7	17	9	0	0	0	7	0	4	0	1	9	10	25	16
63	C	36	2	2	0	5	3	8	8	9	9	3	2	18	14	29	15
64	E	51	8	19	10	0	0	0	5	1	0	0	0	6	14	23	14
65	E	40	10	18	11	3	3	1	7	6	3	6	1	3	18	30	20
66	E	83	8	17	7	0	0	6	7	9	6	1	0	9	11	20	19
67	C	52	2	13	3	0	4	2	3	6	7	2	2	6	14	29	23
68	E	54	7	17	11	2	0	5	5	0	6	0	6	3	10	15	13
69	E	30	8	19	15	1	0	1	6	6	3	0	0	9	16	27	24
70	C	63	7	15	7	0	0	2	2	0	7	0	0	3	13	26	14
71	E	46	19	25	34	9	8	0	9	2	1	2	3	17	13	20	17
72	C	64	2	11	6	0	0	1	8	4	4	0	0	18	14	27	23
73	C	83	7	7	2	0	3	0	9	0	4	0	0	9			

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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Professor Emeritus of Psychology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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